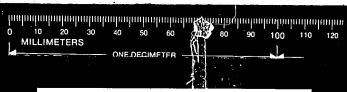

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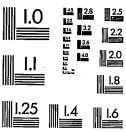

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Thomas A. Edison Papers

A SELECTIVE MICROFILM EDITION

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(1887–1898)

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START

152

A Note on the Sources

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PUBLICATION AND MICROFILM
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Plant Operations Notebook, N-92-05-02.1

This notebook, which covers the period April 1892-February 1893, is a continuation of N-92-03-19. It was used by Edison and an unidentified author primarily for notes from experiments on reducing phosphorous. The tests are numbered 153-158. Test numbers 157 and 158 are complemented by two letters from Booth, Garrett & Blair, analytical chemists. An incomplete, inserted note by Edison regarding phosphorous tests is followed by a complete, variant version in another hand under the title, "Experiments made by Mr. Edison for the removal of Phosphorus from magnetic concentrates." The book also includes two tests for the gold properties of arsenical pyrites. The front cover is labeled "Mr. Edison's Phosphorous Expts #2." The spine is labeled "Mr. Edisons notes." The pages are unnumbered. Approximately 25 pages have been used. Thirteen loose pages have been inserted into the book.

Book 2 –

Sucrose of lead warm
[illegible] at [illegible]
~~100 cc of gms of [illegible]~~
~~Then 33 cc~~ of dil. heated 8
hours on hot plate gives
about 1/3 what Soxh. sac does
perhaps little more – [illegible]
No iron or aluminum used
~~detected~~ = whether it was
Used lead alone that detected
Cautionary [illegible] in former
Experiment took out good
deal 1/2 as much as Soxh.
but I didn't exp. how much
it was –

Oct. 5th 1000 cc [illegible]
of this No — [illegible] 33
Concentrated & then [illegible]
this [illegible] time [illegible] back
100 gm [illegible] 10 hours
on hot plate = $\frac{1}{3}$ of
what [illegible] of [illegible]
gives [illegible] & this may be
due to the stronger.
Calcium of Sucrate —
whether stronger or not
Can't say — No [illegible]
Caine out —

nothing came out —

Humic acid Residues phosCal
soluable —

following salts are to
be tried 50 grms ore
50 cc water — 1 gram of the
substance — heated on
hot plate 24 hours —

Hydrochloride Alumina
Chloride Zinc
" Cadmium
" Manganese

Iron — Cobalt, Nickel,
Copper — Lead, Mercury
Arsenic Antimony

Chloride Tin.
" Ammonium
" Potassium
" Sodium
" Lithium
" Barium
" Strontium
" Calcium
" Magnesium

Potassium - Stannochloride.
Stannic & Stannous Chloride.

Sulphates –

Sodium – Potassium,
Ammonium ~~Barium~~
Chromium, Magnesium
Zinc Ferric Sulphate
Ferrous sulphate.
Manganous & Manganic
Sulphates. Copper
Nickel Cobalt Cadmium
Alumino-Potassic Sulphate
Chromo-potassic Sulphate
Antimony Tin – Lead
~~Arsen~~ Aluminium

26 X Saracinic acid with KO — soluble soapy — whitish pp on adding Maly — dont dissolve on adding NO_3 —

All the X's are no good except Lactose & KO & Dichloroacetic acid — last rather good very little Fe & Al =

phenom — Tetraethylammon Hydrate precip Malygdic acid — white.

Acids

Succinic. Acetic,
Formic, Oxalic, Citric,
Tartaric, Valeric,
Oleic - propionic, ~~phosp~~
Boric, Phosphoric,
Tungstic, Iodic, periodic
Hydrochloric Hydrosulphuric
Hydrojodic, Sulphuric -
Hydrocyanic, Trichloroacetic
Dichloroacetic, Carbolic,
Salicylic, Nitric -
Hyposulphurous, Hydrobromic
Arsenic acid, Stannic acid
Benzoic, picric,
Borobenzoic acid

16 | 322 (20
320

20 lbs

3 | 27000 to 100000
9 00
33000

27.

30000 | 9 6 7 5 0 0 0 (327.
9 6 7 5 0 0 0

Acids Continued

Bromic, Butyric, Caproic

Chloric, perchloric

Chlorochromic, Nitrochromic

Chromic, Chrysophanic

Cresolic (Cresol)

Cyanuric acid, gallic,

Tannic, pyrogallic.

Hydrofluoric, Hydrofluosilicic

Iso-butyric, Isovaleric acid

Lactic, Malic,

Molybdic, Monobromoacetic

Monochloroacetic

Acids Continued.

Orthophenolsulphonic acid (Aseptol)

sulphoCarbolic,

Cresate,

No 153 — 500 cc

~~500~~ 500 cc water

10 gms sugar 1 gm

Soda —

used 33 cc after [illegible]

midnight [illegible] will

get warm [illegible]

[illegible] home now —

154 — ground a lot of

Ogden washed to 190

mesh (190) washed

one part to sent as 154

untreated with acid.

155 Same as 154 treated

with ~~20 cc~~ 33 cc of

a 100 cc 150 cc H_2SO_4 + heat

1 X Aethylen Monoacetat, ng
2 X Butylso-Bromat ng
3 X Methyl-propyl-Ketone ng
4 X Methyl Sulfo Cyanat ng
5 X Methyl acetat,
6 X Guajakol. Ranff - ng
7 X Nitrotoluol ng
8 X Pyrid — Hydrochlorat ng
9 X Dichloroacetic acid Very good
Got Little Fe + Al taken out
10 X Tetraethylammon Hydrate — ng — but pp Malyb dic acid or something — unsettled,
11 X Ammon Sulfocyanate. ng
12 X Ammon Benzoate ng
13 X Analin Chlorat ng
14 X acid phlalic — would not dis added KO — only part dis — ng

15 X Methylamin chlorat ng
16 X Piperonic acid KO – ng
17 X Ur-Ethane, ng
18 X phenolphtalein in KO – some but due to KO –
19 Di-Resorcin not sol added KO ng
20 – Chloral Hydrate. KO – give off chloroform ng –
20 Chloral Hydrate ng
22 Salicilin + KO ng
23 X Nitrophenol ng
24 X Nitrophenol + KO ng
25 – Thymol KO – ng
26 Lactic acid KO ng
27 Picric ammon – ng
28 Cresylic acid KO ng

30 X Succinic a KO ng

~~30~~ 29 – Succinic acid – Con

31 Balsam Copaiba + KO ng

32 ~~Lactose ng~~

33 X " KO – KO dissolves some

34 X ammon sulphophenyl ng

35 – glycerin ng

36 " + KO — KO dis some

37 Succinamid – KO ng

38 Nitroso B-Napthol KO ng

39 Sulpho cinnic acid ng

40 – Sulpho " " + KO ng

41 – Sulphocarbamid – ng blues molybdic sal —

42 " " + KO – Glucose ng

43 Nitrobenzaldehyde + KO ng

44 pyrocatechin ng

46 X Molybdate ammon + free acid ng
47 Albumen + KO
48 gum Dextrin + KO + KO dis. sam.
49 meta Dinitrobenzol + KO ng
50 ammonia Glycerbizzin ng
51 " " + KO ng

156 – Treated several times with Sulphuric Acid both strong & weak & once with Citrate Ammonia – Last time heated with strong SO_4 & got nearly a pin head of yellow pp – I sent this to B & B to see what amount of P is left when Acids take nothing from ore – .005 B & B June 9 –

157. treated 24 hours 1.4 cc Sul acid Sp gr 1.85 – 890 cc water stirred except at night. when finally washed put little of the 890 fresh Sal in to make it acid for a moment only for fear there was no free acid. Hot plate

[ITEM FOUND IN BOOK]

C O P Y.

BOOTH, GARRETT & BLAIR,
Analytical Chemists,

406 Locust Street,
Philadelphia, Pa. June 16th, 1892.

N. J. & Pa. Concentrating Works,

Dear Sirs:-

The two samples No's 157 and 158, of Iron Concentrates, which we received from you on the 14th inst, contain:

No. 157, Phosphorus,-------- 0.021%

No. 158, Phosphorus,-------- 0.026%

Sample No. 156 we will send you as soon as we can repeat our analysis, an accident having happened to our first determination.

(Signed) Booth, Garrett & Blair.

[ITEM FOUND IN BOOK]

BOOTH, GARRETT & BLAIR.
ANALYTICAL CHEMISTS.

406 Locust Street.
Philadelphia, June 18th 1892

N. Jersey & Pennsylvania Concentg. Wks.

Edison Building Broad St. N.Y.

Gentlemen:-

The sample of finely ground ore received from you a few days since marked "156" contained as received and not dried:

Phosphorus..... 0.005%

Yours respectfully,

Booth Garrett & Blair

RECEIVED
JUN 21 1892
Ans'd _____ 18

157 = As it took several hours on hot plate before metallic iron all dissolved it looks as if the ore should be 100 mesh and left one week on hot plate, or better continuously percolating apparatus — using 1000 cc water, 1 cc SO_4 — .021 Bl+B

If this sample shows less than .015 then I believe it can be brought to .010 in 3 or 4 days with above solution =

10	225°	48
11	"	72
12	"	19
13	11	01

158. 800 cc water. 1 cc
1·8 SO_4 — on bath 100 hours
twas acid up to 70 hours
in washing poured out all then
added waters & little acid &
washed it. $\frac{1}{3}$ of it dont
seem to show the usual granular
of yellow salt. = twas on hot plate
·026 Alg 1B

I had a 1000 cc. $1\frac{1}{2}$ cc Ammonia
no iron comes out first day.
a test of small granular
shows 2/3 of what SO_4 does
but after 70 hours even
when washed with SO_4
scarcely any phos —

No 1 30 grams Modoc
Arsenical py - about 150
mesh - plenty HCl - Steam
bath = ~~Heavy gold dirt~~ -
it didnt clean it much or
decompose pyrites. put
Residue on glass & very
slowly run it to Edge
shaking - under Micro -
plenty gold fine & large but
so dirty with dirt of pyrite
coned scarcely tell it was
gold - Carried hand the
Edge on watch glass
& bleached for instant with
nitric this brightened it
little but considerable
pieces were lost in form
in small glass & poby
floating I notice a great
deal way to float

Consider K strips chars
Considerably - may be that
actual contact of pyrite
dust with gold in acid
solution produced chemically the
acid & gas which lighten
Gold. I think this experiment
proves that that gold is
present but cant be seen by
Eye & very hard to see with
where & also that there is lot
of silver which reduces Spec g
to say 12 or 13. & the pyrite
lightens it & may be the gas
helps there is only just enough
Spec g diff to cause separation
of gold - If sized material were
cooled or semi roasted to lighten
or magnet used influ roast
to decrease Spec g then a
very delicate buddle or opal
fine gold could be separated
off that was fine to 80% or more of this

No 2 30 grms Modoc Arsenical
pyrite - 3/4 water 1/4 HNO3
thoroughly dissolve -

Feb. 1st 1893

Experiments made by Mr. Edison for the removal of Phosphorus from magnetic concentrates.

100 grams ring Ogden ore sieved through a 50 mesh brass wire screen to get lumps out, then washed (not near perfectly) and put in bottle with 35 cc of a 2 % solution of water and commercial H_2SO_4, shook by Harris at times for two weeks.

Liquid poured out in filter, then bottle filled again and this poured on filter, liquid was slightly acid, added molybdate solution, got considerable precipitate, then washed ore 3 times with water, and then left say 70 cc water in ore and added 10 cc of a 2 % solution H_2SO_4, and shook for 5 minutes. Poured liquid on filter, half filled bottle with water to wash out well, and poured this on filter. This solution also gave good ppt. of

(over)

on Feb 20 poured out 3 pounds of Ammonium sulphide - ~~[illegible]~~ added say 20 cc water to wash it all out of jar. Heat ore phosphorus it then washed the ore with water - then added 10 cc of 2% sol Sec acid shook & allowed it stand 10 minutes found about 3 or more phos as in the ammonium sul solution came had

Reported to Mr Edison on Monday Feb 6th

Dr Nichols been absent

Tomorrow N H Sulphide and to better clean with alcohol after acid - combine over 2nd & send to B 294 B

Feb 27 for phos assay

000027

yellow salt, showing that the Phosphoric acid recombined with iron or alumina, etc, and required an acid solution to remove it.

Washed the again 3 times, and now added 4½ cc of a 2% sol of sulphide of Ammonia, $[(NH_4)_2S]$, with 15½ cc H_2O, of course there is already say 10 or 12 cc of water in net ore.

Put $(NH_4)_2S$ in on Monday Feb. 13th 1893

On Feb 20 poured out sol. of $(NH_4)_2S$, added say 20 cc H_2O to wash it all out, found great deal of phos. in it. Then washed the ore well with water and then added 10 cc. of 2% sol. H_2SO_4, shook, allowed to stand 10 minutes, found about 1/3 as much Phos as in $(NH_4)_2S$ solution, showing some had reverted to phos. Fe or Al, or had not been attacked. Possibly $(NH_4)_2S$ (ous) would do better alone

with slight after acid.
Washed out, dried, and sent to
B. C + B, Feb 20th for Phos. assay

900000
.02½

450000
180000
22,500
40000
62,500
15625
46875
12000
58875

[ITEM FOUND IN BOOK]

[CA. FEBRUARY 13, 1893]

100 grammes Reg Ogden ore
sieved through a -50 mesh
brass sieve screen to get
lumps out, then washed (not
near perfectly) + put in bottle
with 35 ~~grams~~ cc of a 2%
solution of water + Commercial
Sulphuric acid - shook by
hand at times for two weeks -
Then poured out in filter, then bottle
filled again + then poured in
filter - liquid was slightly
acidulated Molybdic Sol
acid - got considerable precip - then
washed ore 3 times with water
then left say 20 cc water
in ore + added 10 cc of
2% sol of Sul acid + shook

2

+ shook for 5 minutes -
poured liquid on filter +
added bottle. 1/2 full water
again to wash out well +
poured this on filter -
This solution also gave good
precip ~~of phosph~~ yellow
salt, showing that the
phosphoric acid recombined
with iron or aluminate
+ evaporated the solution
acid to 6 oz got out =
Washed ore again 3
times + now added
4 1/2 cc of a 2% sol of sulphide
of ammonium - with 15 1/2 cc
of water of course there is
say 60 or 12 cc of water already
present Sul NH - Monday Feby
13 1893

[ITEM FOUND IN BOOK]

Dally.

Make some very fine Copper by reducing Sulphate with Zinc violently agitated so it dont clot, wash well & dry Naturally, Edwin will explain Mention —

See if Jacob B8 succeeds with the formalin tartaric Compound

Mab

Dally —

Boil Morlain with Nitrate of Lead also acetate lead till lead succeeds also Bismuth acetate — none

Make a Gelatin Emulsion in water mix therewith Linseed oil & Castor oil then agitate the solution with formaldehyde & glycerine

Make Hydric acid from Sugar with weak H_2SO_4 boiled —

Make = Silicate Soda 6 parts glycerine 1 part, Red lead 3½ parts. the Silicate & Glycerine are mixed & then the Red lead — to thicken 10 parts of mixture under like band — it goes to a pulley

[ITEM FOUND IN BOOK]

602
649
653
651
635
670
671
669
672
686
640
601
604
641
614
620
603
631
656
682
737
677
678
699
719
667
731

Heat your butter dishes
so Mercurous will cool slowly

Dolley

~~Powdered Mercury, then 150 or 200 mesh put in Good Conc Nitric acid for several hours — wash free of acid & see how it melts. Save a part of the oxidized Mercury & put little acid KOH with it & melt.~~

~~Add little hunks of NaOH to Melted Mercury — try various proportions —~~

Add to Melted Mercury —
~~Manganese Sulphide —~~
also ~~Dry Potassium Sulphide~~ (yellow kind — Tin box) also precipitated pink ~~Arsenic Sulphide~~ — also ~~finally precipitated Antimony Sulphide —~~

~~Powdered Mercury 200 or 150 mesh put 3 or 4 grams to soak in small beaker with formaldehyde~~

[ITEM FOUND IN BOOK]

2

Burn some rubber ~~[illegible]~~ same as was used on glass & rap Cracks add various proportions to ~~[illegible]~~ Mellod Montan —

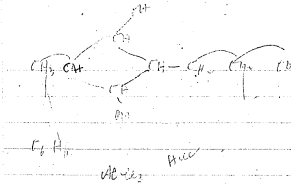
~~Add to Mellod Montan powdered Caustic Lime — also try finely slaked Lime —~~

~~Calls of some Lumsdon & Cofilms from a paint factory see if a suitable Mellod Montan~~

~~Test all the different Asphalts. Use have & try each one Each one with a different proportion~~

~~Try Acetates of the Metals you will have to keep the mix that mixed Most of the acetic acid is gone you can still by the smell —~~

Mix Oleate Alumina with Montan



Dissolve in benzole and warm in a refluxing ~~[illegible]~~ cooler and then add small quantity of Chloride Aluminum boil a long time then wash out with water and heat until free from water

[ITEM FOUND IN BOOK]

Naphtalin Bichromat.

Carbonium Trichlorat

Diphenylamine

Meta Phenylendiamine Base

Hexachloro Naphtol

Amidophenol Para.

Naphtalenin Hydrochlor.

Alumida

Cyrin asphalt

soft Mexican

Tarin pitch

Pyhne asphalt

opal

crude Trinidad

Gilsonite

Refined trinidad

Cubam

Hard Mexican

[ITEM FOUND IN BOOK]

copper sulphate
Alum - for Aluminum sulphate
Magnesium sulphate - Epson salts
Manganese sulphate
zinc Sulphate
Iron Sulphate
Lead Nitrate

[ITEM FOUND IN BOOK]

Iron Protochloride
Stearate
ferric Sulphate (Basic
Iron sulphate
ferrous Citrate
Mang. lacate
Amm Protosulphate
Perchloride
Resinate
acetate
Ferrick Amm Tartras
" Citras
Tartrate
Iron Carbonate
Fer Oxydat Hydrat
Ferret Potass Tart
ferrum Tannic
Iron phosphate
Amm persulph.
Chloride
Ferret Potass Tart
Iron Protosulphate

Persulphates
perioides
Chlorates
Perchlorates
Phosphorus
Hypo chlorates
Bromates

[ITEM FOUND IN BOOK]

Barium Carb 701
Cadmium " 702
Lith " " 703
Iron " " 704

696
24
720

[ITEM FOUND IN BOOK]

We find that in the nine samples of concentrates received from you May 2 marked as below

	Phosphorus	Sulphur
#137 –	0.016 –	0.069
#138 –	0.015	
#139 –	0.017	
#144 –	0.014	
#145 –	0.015 –	0.084
#148 –	0.017	
#149 –	0.014	
#150 –	0.023	
#152 –	0.022	

Robt Gowen & Blair

Plant Operations Notebook, N-93-01-10

This notebook covers the period January-February 1893. It was used by Charles Batchelor and Edison primarily for notes, drawings, and calculations from 63 numbered experiments on the magnetic separation process. Notes on experiment 62 are by Walter S. Mallory. The series is followed by drawings, notes, and measurements from a "Duster experiment" and an unnumbered "Concentrate Seperator Experiment." An unidentified graph is inserted near the end of the book. The pages are unnumbered, and the book has been used in both directions. Approximately 140 pages have been used.

Original 57.92

15 coarse + fine 61.54

15 coarse (larger sample) 62.61

15 fine 69.50

After separation by hand magnet

Mesh	50 mesh concentrates	14 mesh crude	Size of mesh in thousands
100.	15.17%	15.69%	6 1/4
90.	4.50.	7.38.	6 4/10
80.	3.70"	1.95.	6 1/3
70.	12.72"	7.13"	11
60.	5.28"	1.78.	8 3/4
50.	15.13"	5.03"	12
40.	20.04"	11.90"	16 1/2
30.	20.54"	10.40"	22 1/2
20.	2.71"	23.46"	38
14.		12.49"	45
Larger 14.		6.63"	
10.	18		
Larger 10.			

65
31
65
195
80

2240
2013
227

545
227
318

6

124
80
2240) 9920 (4.4
8960
960

621
80
49600

2240) 49600 (22.1
4480
12800
11200
1600
1344
256

96.1
124

800
147
653

80
22
58

653
4.4
69.9

45
80
2240) 3288 (14.7
2240
1048
896
152

63
31
63
189
1953

45
31
45
135
139.5

2240
1395
845 — tons
287
558

59
31
59
177
1829

2240
1829
411

2240 45 80 tons 1st mag
1953 59 65.3 tons 2nd mag
287 63 60.9 tons 3rd mag
65 58 — Tons —

40

775 | 40.00 | 0.052
3875
1250
5 3/4

0.52
350
775
1750
1550
2000

2.4
29
216
48
69.6

775 | 69.60 | 0.09
6975
0.50
40,50

8.5 | 690 | 7
690

746 | 21210 | 28.4
1492
5970
5970
5320
5320
9.6
4
38.4
96

775 | 21210 | 27.35
1550
5710
5425
1550
2825
425

134 × 4 × 1 150
12 404 38
402 1728

38.4
66
7280

2.73
3.9
10.7
4.6
6.67

1728 | 15000 | 0.0868
13824
11760 160
10368 1920
13920

21½
8 | 2564
318

66.7
3.16
5.56
6.67
200.1
21210

66.7
3.80
6.64
13.00
1.4
1.0868
746 | 1.44
746
3448
2984
464

| 21.45

1 Cub. inch = 0.0868 lbs

Jan 10 1893

8½ lee 2 rev. 14 per min
2½ amp 28 Volts 1

Magnet separator test
Roller feed cylinder diam 3"
Slot opening ¼ × 6½"

1st Exp.
12 Rev. per min
29 Volts ~~amps~~ amps 2.3
length of magnet 8"

What HP for ~~40~~ 160 feet of this magnet?

66.7 Va. × 240 ÷ 746 =

~~28.4 HP~~

21.45 HP

Tailings in ¼ 1.44 —

60 / 1.25
60
1.25 / 60.00 = 48
500
1100
1100

14 : 1 : 48
14 / 48 = 3.43
56
43

113.50
60
6810
135
18160
4540

2nd Exp

1 turn in 1¼ sec. = 48 turns per min

1 ton a ~~hour~~ on 14 hrs. Hour must is ~~ton~~ 48

3.43 ton per hour

Iron 56.11 in tailings taken

Dimensions of magnet

Iron 8" long 8½ X 2 thick

copper on it 7.25 X 8".25 X 6.25 X 2

= 80.75 cubic inches X 9 =

756.2 copper wire space

X .5 = 378.1 X .30 =

113.43 net copper = copper on magnet 6 feet wide

3rd Exp. #1 position

12 Revs. per min ✓

Tail 1.81

Iron 61.54

4th Exp. Jan 10 1893

1 turn in 11 sec 5.45 revolution per min

Lail. 2.53

Lum 62.35

This was at #2 position & it shows that with a thinner stem as against a thicker one the position of the parting board would have to be more towards the tailings ⅛" to get the tailings back to 1.81 as in former exp.

5th Exp. #3 position parting board ⅛" ~~40 revolutions~~ sieves iron side

3 rev. in 7 sec 26 revolutions

28 Volts. 2.3 amps

Lail 7.24

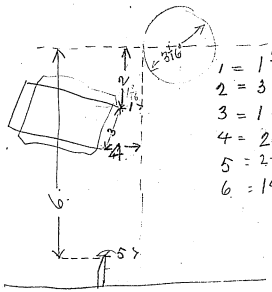
The best test in these exp. is parting board at #2 position & 12 Revolutions

✓

11 60 6.13

60 1:3 60

All succeeding exp. were made with the position of magnet



1 = $1\frac{9}{16}$"
2 = $3\frac{25}{32}$"
3 = $1\frac{29}{32}$"
4 = $2\frac{7}{8}$"
5 = $2\frac{7}{16}$"
6 = $14\frac{5}{16}$"

60 | 5.5 | 600 | 11
5.5
5.5
5.0

3.5 | 600 #7.1
35
25.0
24.5
5.0

9.6
17.2
6.16
12 | 7.3.2
3.6

.25
6.5
1.2.0
1.6.2.5
9.6
9.6.5.0
10.6.2.5
15.6.0.0.0

.0868
15.6
5.2.0.8
3.4.6
8.6.2
1.3.5.4.0.8

1.3.5.4
6.0.2.1
2.0

2.4.0
3.4.0
22.40

6th Exp. New position of Magnet
7 sec for 2 Rev. = 17.1 Revolutions
Current 2.15 Volts 28
13.6 feet per minute of Roller
Failings 3.18
Dim 60.45 Paling board same

What does 1 Rev of Roller feet weigh per foot of magnet (1 side)?
$\frac{1}{4} \times 6\frac{1}{2} \times 9.6$ = cubic inches 15.6
15.6 × 0.0868 lbs = 1.354
12" magnet interior 8 = 2.03 lbs per turn

#7 Experiment.
~~[illegible]~~ 38 Volts
2.4 Amp.
$5\frac{1}{2}$ sec = 1 turn
11 Revolution
Failings 2.53
Dim 60 45

4·6 | 60·0 | 13·0
62
140
138
·20

17 | 83 | 4·4160
17 | 75
68
70
68
20
15

4·4 | 1·6000
0449
1323
67

8 Exp.

Volts 38
Amp 2·5

10 turns in 46 sec
13 turns per min –
Lading 1.81
Iron 59·36

This is with the bore with brass plate, in which the top edge of floating plate is 4⅞" higher than the other

9 Exp.

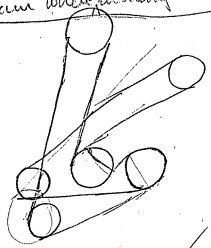
Volts 34
Amp 2·45

~~83 sec 17 Rev 12·2 Rev per minute~~
75 sec 17 Rev 13 Rev per minute
Lading 3·25
Iron – 59·73.

#10 Exp
The tailings of #9 was run through
Volts 32
Amp 2.25

Tailings ⇒ 1.81
Iron

The concentrate was quite considerable in this exp about say 50% ore must try again with stronger magnet + clean to the stream when running tailings



#11 The concentrate of #9 run over again

Amp 2.3
Volts 35

Iron 62.26

#12 The concentrate of #11 was run again

Amp. 2.35
Volts 36

Iron 63.65

Tailings 7.24

Note - the magnet after being on for about 2 hours at above Volt Ampere is about as hot as we dare let it get - Therefore it will not stand more

---

#13 The concentrate of #12

Volt 32
Amp 2.3

Iron 65.98

Edison thought here that the Ore has too much coarse in it + he

sieved it & found it at least 20% coarse & he tested this coarse which was the concentrate of #13 it showed

64.36

Jan 10 midnight 1893.

Edison took some of concentrate #13 & blew the dust out of it & it then tested 69.86 – He held it in his hand & blew

Take measurement of magnet etc for Exp 8 & 13 Jan 11 1893

Measurement of magnet etc for exp 6 & the present #13.

1 — 1 $\frac{11}{16}$
2 — 2 $\frac{23}{32}$
3 — 1 $\frac{29}{32}$
4 — 2 3/8
5 —
6 — 9 7/16
7

#14 New Setting of Magnet Jan 11 1893

Amp 2.8

21 Lec 4 Rev. Volts 38.

11.4 Rev per min -

Position of parting board #1

Iron 57.19

Tailings 3.43

#15 Concentrate of #14 run through again

Volts 32

Position of parting board #2 - Amp 2.45

Tailings put into tailings of #14

Iron. 64.43

#16 Concentrates of #15 run through

Position of parting board #3 Volts 32

Amp 2.45

Tailings mixed with tailings of 14 + 15

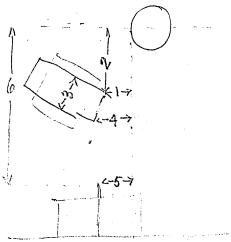
Iron 64.43

#15 non evidently a mistake

#17. Concentrate of #16 run through again —
Volts 32½
Parting board in #4 position Amp. 2.5
Tailings mixed with 14, 15 & 16 —
Iron 65.16

#18 Concent. of #17 run through again
Volts 34
Amp 2.6
Iron 66.97
Tailings mixed with 14 15 16 + 17

Jan 11 1893



1 = $1\frac{15}{16}$
2 = $1\frac{31}{32}$
3 $1\frac{29}{32}$
4 = $2\frac{7}{16}$
5
6 - $9\frac{7}{16}$

#19 Concentrated Sunshine again 1/18

Volts 32
Amps. 2.55

Taking out on the other tailing
Iron 67.33

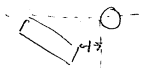
By working dust out (the unkillable) with a magnet we got 70.22, that amount can probably be taken out by the impact machine

20. The accumulations of tailings of 14 to 19 were now run through Parting board #1 position

Volts 37
Amp 2.5

Tailings - 2.71

Position of Magnet for these tailings



#1 $1\frac{7}{16}$

Same every other measure except just made closer.

There were some pieces stuck to the magnet at this setting but this was due to the fact that I broke the magnet at different times when making these tailings + what came off magnet then stuck. It would not occur in practice

1/32

3/16
1 1/32
1 3/64

Tailings of 20 too high so we mix it up again & try 21

#21 Same as #20 but parting board in #½ position —
Volts 36
Amp. 2.5

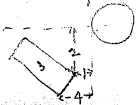
Tailings 1.81

Iron - Jan 11 1893

#22 A new lot run through
= with magnet assembly set + parting board (bore one) in #2 position
Volts 38
Amp. 2.55

Tailings put in pail

Iron. — 57.92
Tailings — 3.62



1 = 1 13/16
2 = 1 3/4
3 =
4 = 2 7/16

23 Current from 22 run through
2nd time
Parking boats #2 position { Volts 30
Amp. 2.3
Iron. 63.16

24 Current from 23 again
3rd time running Volts 32
Amp 2.35
Iron 63.64

$8\frac{5}{8} \times 2\frac{5}{8}$
$7\frac{7}{8} \times 1\frac{7}{8}$

25 Concent run again
4th time { Volts 36
Amp 2.48
board same position

Dem 65.16

26 Accumulation of 4 tailings
22 to 25 Volts 40
Amp 2.55
parting board #1/4

Tailings 2.89
Duplicated " 2.71

By taking these tailings + mixing up again + setting magnet closer + run half speed we got tailings ← 1.44.

✓

27 We now ground enough for the to the through 50 mesh, & tried it—

Volt 38
Amp 2.5
Iron 55.02
Tailings 4.70

---

28 Ran em. of 27 a 2nd time
Part. board #1 position
V-38
a-2.5
Iron 57.92

29 Concent of 28 3rd run

Position of board #1 V 38
a - 2·4

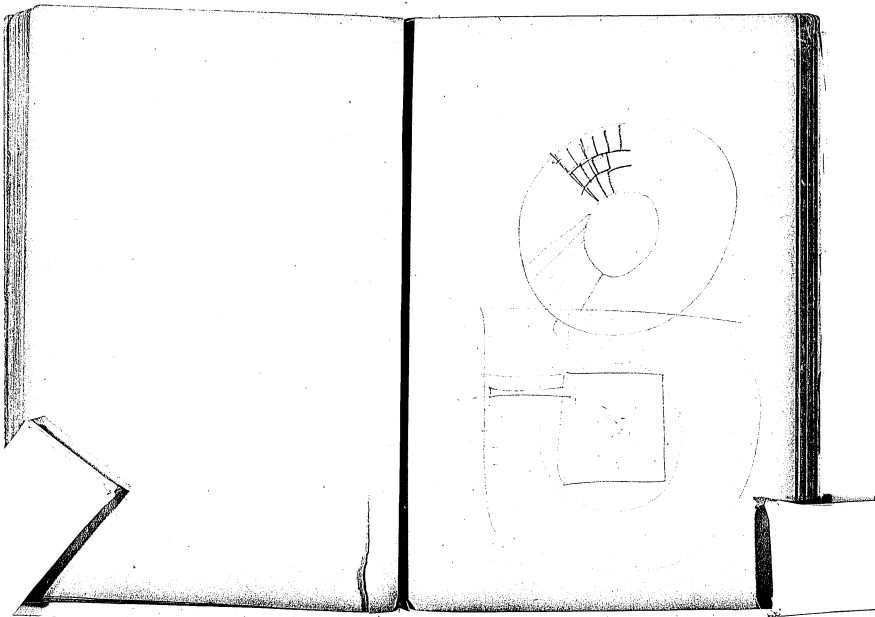
Iron - 61·54

---

30 Concent of 29 4th Run

Position of board # V 38
a 2·45

Iron 63·17



31 We were lowered the top of
the beating board edge 4"

#3 position for beating board { 40 V. ~~[illegible]~~
2.5 a. ~~[illegible]~~

Gros — 57.92
Tailings — 3.25

---

32 Another lot of regular concen

#3 position of board V 30
a 2.20

Gros 60.81
Tailings 4.08

63.36
65.88

33 We kept the magnet up in this manner, the top of the magnet had a plate on so that it could be moved towards the roller stream independent of the magnet. A sheet of thick paper was put in front of the magnet + held in a curve underneath the magnet. The whiskers were allowed to accumulate on the plate at top of magnet + also at the bottom on the paper.

The first run of this with three amps. gave a concentrate of 63.36

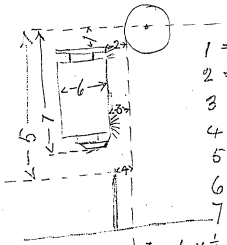
The tailings were not tested

The concentrate was run through again with 3 amp + 22 revolutions and gave a concentrate of 65.88

The tailings of this were added.

to the first & not tested
The second concentrate was run through
again 22 Rev. 3 amp and gave
a 3rd Concentrate of 66.97
The tailings were added to the other 2
The 3rd Concentrate was run through again
at 22 Rev. + 3 amp + gave a 4th
Concentrate of —— 67.05
The tailings were mixed with the other
three + tested before running through
again Iron — 8.32
They were then run through the
machine again with 3½ Amp. + then
they tested 2.17

Dimensions of the magnet & machine as we have it



1 = $1\frac{11}{16}$
2 = $1\frac{1}{16}$
3 = $2\frac{7}{8}$
4 =
5 = $18\frac{5}{16}$
6 = 3"
7 = $10\frac{3}{4}$

Plate on top was $9\frac{7}{8} \times 6 \times \frac{1}{4}$ thick steel & stood over from edge of magnet $2\frac{1}{2}$"
Bottom piece of magnet iron stands flush with side —

Jan 12th 1869
1 a.m.

16 | 75

34 Jan 12 1893

12 Sec 16 turns 75 Res per min

Amp 3

Volts 38

Failing not tested

Current. 61.54

Fail 7.24

35 Current of 34 run again

Amp 3

Volts 42

Failing mixed with the others

Current. 63.71

36. Concert of 35 again through
3rd time V 43
Failing mixed with other Amp. 3.

Concert 64.43

/

~~37~~ Concert ~~of~~ 36 again
4th time V a
Failing mixed
~~Doubtful this through~~

37 Test of tailings of 33.35.
T 36
about 50 Rev per min Volts 39
Amp 2.9
Sum - 2.71

We did not think amperes were quite strong enough as we tried again after removing

38 Test of same tailings is 37
about 50 Rev Volts 52
Amp 3.45

Sum . . 1.44

39. We thought it well to run the tail through a second time & the result was vast { V 53
Q. 3.5
-1 about 50 sec.

tails .88

Jan 12 1893

40 We think we could do better by leaving the sinuosity in the first tailings V 46

Amp 3.0

Iron 62.62

Tails 14.48

---

41 Con. of 40 run 2d time

V 40

a 2.5

Iron. 65.52

Looks much better than tails of 40

42 Cu of 41 a 3rd time
V 40
Cu 2.5
Iron. 66.60

43 The tailings of all were run
V 60
Cu 3.2
Iron: 1.81

V

44 The tailings run 2d time
gave = { V 50
a. 3.2

Drm 1.08

We found a bad place in
our pole pieces so we can
do better than times +
we now fix up with better
pole pieces etc —

✓

80 tons comes over at 4.5%
800 lb. tailings at 20%
How much is that of the total

65.10
10.50

60

70
69.50
68.8

45 We now changed the magnet so that we had same drop and arranged as shown further on

Fourth run — Amp 3.

60 Rev. about Iron 65.10

Tail 10.86

✓

---

46 45 Concent run 2nd time

60 Rev. about Amp 3

Iron 68.05

Tail

Tail mixed with the other

✓

50 5,5

21 / 135 / 56 / 210 / 156 / 54 / 1,35 / 63 / 20 / 780

95% goes down

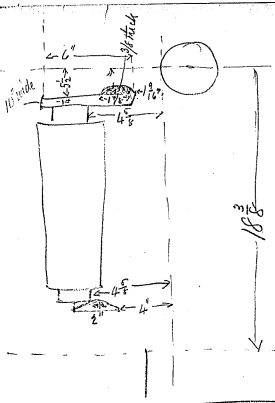
41 Passed 46 Run 3rd time
60 Revolutions V 48
a. 3
Gm 68.78

Tailings ground with the others
this concentrate passed through 100 mesh weighed
Cm. 21 grammes
100 mesh carried 95% of all the dust — What did not go through 135 grams + the

48 Tailings of all now were
Run V 50
Gm 50.00 a 3.5
Lait. 1.44

✓

$$\frac{135\frac{1}{2}}{15\frac{1}{16}}$$

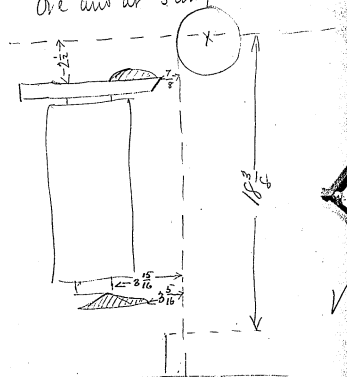


Now for ailings make top of plate $2\frac{1}{2}$" from center of roll and 40 was run with this measurement the magnet being moved towards the drum $\frac{11}{16}$ –

Midnight Jan 12 1893

58.47
1.44

49 With this setting I am. Jan 15th 1893
we now took regular Jan 15th 1893
One and at 3 amp + about 60 revs.



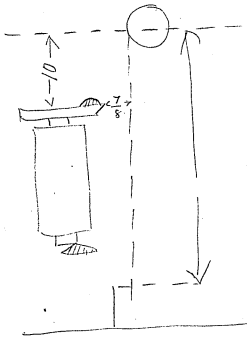
1st run Sm 58.47
Fails 1.44

Fails known away and concent.

Run a 2nd time
60 Rev.
3 amp
Current 59.36
Tails thrown away

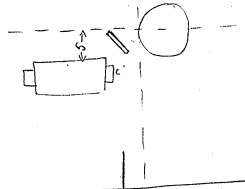
V

50 We now placed it as:-

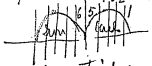


5 was equally taken from the tailing of iron lumps & was the mugwump between

Jan 13 1893



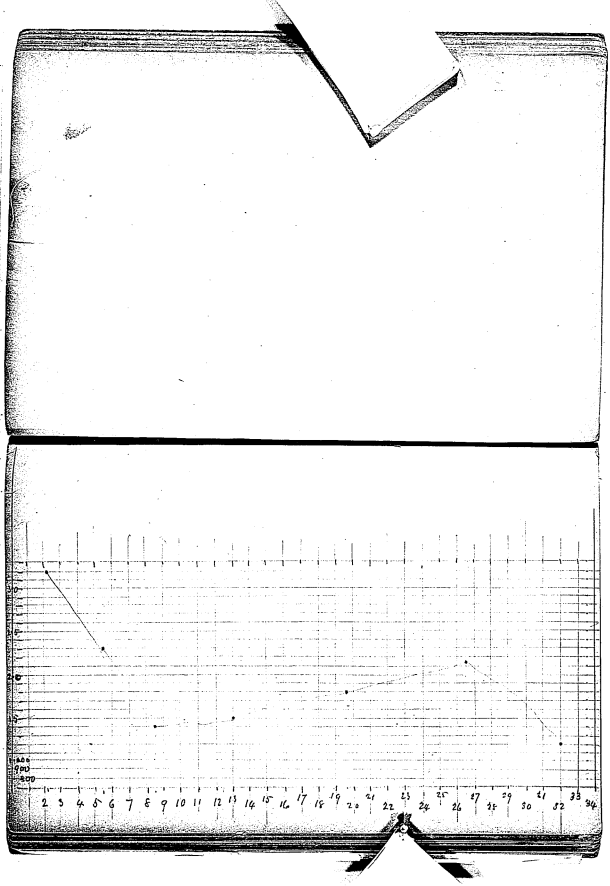
A run was made and the result separated as: #1 beginning at end of tailing pile



A small cartridge shell of each was taken & separated to get the proportion of gold & mugwump in each

	good	mugwump
#1	2.200	3.200
2	5.500	2.300
3	8.500	1.400
4	13.000	1.500
* 5	19.600	1.800
6	26.500	2.150
7	32.000	1.200
8	34.700	0.500
9	35.000	0.800
10	34.700	0.800
	20.800	1.400

A shell full of original showed and weighed 31.150 grams


2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34

52 Same again as 51. Jan 13 1893

%		Gold	Mugwump
1	First Tails	0.150	2.000
2	Second Tails	0.050	2.300
3	Third Tails	0.050	2.200
4	Fourth Tails	0.200	2.300
5	Mugwump Tails	2.300	2.950
6	Bottom dividing line + a little up the hill of Concent	21.200	3.100
7	Concent.	30.700	1.300
8	Concent.	32.800	1.200
9	Concent.	31.450	0.800
10	Last Concent.	34.400	0.900
Original Material		16.800	1.300

Mag 5.00

2.53
1.81
4.34
2.17

5.80
2.900

53 Jan 13 1893

A lot was now run through & the concentrate run again & the concentrate again making 3 times. The tailings were all mixed together

This gave Concent 65.88

Vots 50. Tail. 2.53

Amp 3. Tailings the second time 1.81
average of four "tests" 2.17

The concentrates from remunning the tailings gave for 1 shell load

good	mugwumps
27.600	5.000

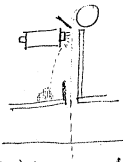
The tailings of this gave

good	mugwumps
0.150	2.900

The above tailing test show that we have got to loose from 2 & 2.5% because it is all mugwumps.

Jan 13 1893

54 We now cut out the table so that the tailings could go through and put a board up at back of the tailing fall, to guard it from wind; the arrangement being intended to get a draft down to carry away dust etc.



Concent 61.54

The ore is fresh and very dusty

55 We now closed in the sides with boards 7½ wide so as to make it a better chamber

62.26

This ore was a little damp — tried again with drier ore

60.63

56

Jan 14 1893

With the machine set as at 55 — we ran through some ore that had been screened by Phelps through a 50 mesh slot screen by gently lifting it up so that it made a screening about 1 lift a second in the direction of the slot

3 amps

Concentrate 63.35 Nickel 38

Tailings 2.29

The mugwump in the Concentrate was very small

The mugwump in the tailings was large ~~The total~~ about 2½ times the good that was in it

This experiment shows that we can use the ~~set~~ machine for this most provided the dust machine works all right

There was a great deal of dust in Concen.

2 a.m. Jan 14 1893

57 With machine set as at 55
we now run through some regular
14 mesh ore

3 Amp
58 Volts

Concent 54.30
Tailings 5.79

The ~~meat~~ material is much too
large as we sieved it through 14
mesh slot screen by moving slowly
in direction of slots and ran
~~it~~ through another lot as shown at
58

58 Regular 14 mesh material screened through 14 mesh slot screen slowly by tipping box on angle & light lowline 3 amp

Concent. 56.11

Tailing 5.25

59 The tailings of this were run through a second time

3 amp

Concent 16.83

Tail 3.98

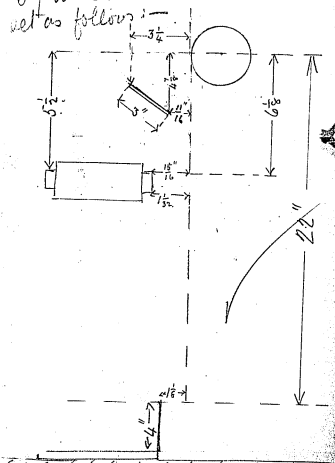
The fall of this is too great from the ~~impact board to the magnet~~ roller feed to the impact board over the magnet & the current should be about 4 amp

16.83

3.4
4

Note 4 a.m. Jan 14 1893

All the experiments from 51 to 59 were tried with the machine set as follows:—



Jan 14 1893

60 We now moved up the magnet antiparallel board 2" otherwise the machine was in the same position - except the brass parting board was used in box

3 amp

Concent 57.19
Tail 3.62.

The tailings were run through a second time & work

3.3 Amp

Concent
Tailings 2.53

The first concentrate of this exp. seemed so low that we thought it looked better than it tested so we tested it again & verify & found

Concent. 56.11

61 Regular 14 mesh stuff passed three times over a 14 mesh sieve 24" long, belts in direction of length)

3 amps.

Concent 57.19
Tails 5.43

The tails were run through again

Am. 3.4

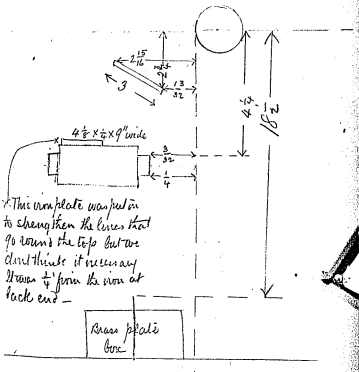
Tails 2.17

A second running of the tails after being mixed up again gave.

1.44

The measurements of the machine for this were as follows: —

over



The two concentrates were mixed together & treated & gave

55.38

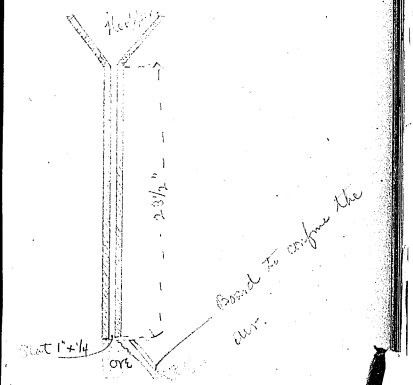
61.54

13. July 2 - 1889 :-

Mr [illegible] Brine -

First [illegible] so much crude from so much [illegible] which averaged 37.35 % we then run through magnet + got 60.5 % + then put it through [illegible] cloth [illegible] page) 15 times and each time ~~[illegible]~~ [illegible] unmagnetic - result after 15 times ~~[illegible]~~ 63.65 % the fines seem to be nearly all gone + only large particles of magnetite left - in this test

We cover out on cover - ~~sizing~~

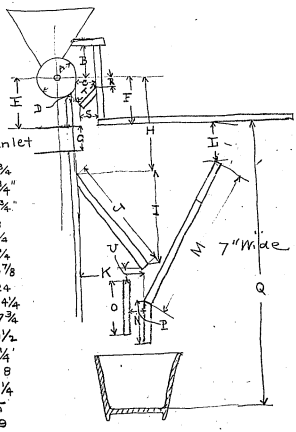


62

[illegible] [illegible] [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible] [illegible] [

Ducter Experiment Feb. 18. 1893 2. p.m.



A – 5¾
B – 5¾"
C – 2¾"
D – ⅜
E – 9½
F – 9¼
G – 3⅞
H – 24
I – 14¼
J – 17¾
K – 9½
L – 9¼
M – 28
N – 1¼
O – 5
P – 9
Q – 58½
R – 4½
S – 2
T – 3 3/16
U – ⅜

all ⅞ Stuff

$18\frac{1}{2}$
$17\frac{1}{2}$
13

$2\frac{7}{8}$
$3\frac{3}{8}$
$5\frac{1}{8}$

9

Concentrate Seperator Experiment

Feb 16. 1893
12 midnight

2 tons capacity
per foot of Magnet on side out-

18 revs.

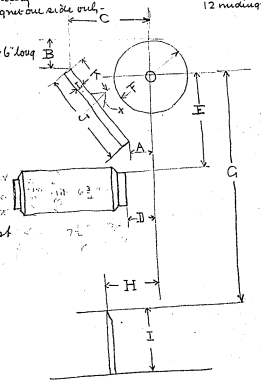
Opening R.F. 1/4" x 6" long

1st 62.08
2nd 63.98

Repeat conc.
Split

Con. 63.53
Tail. 22.08

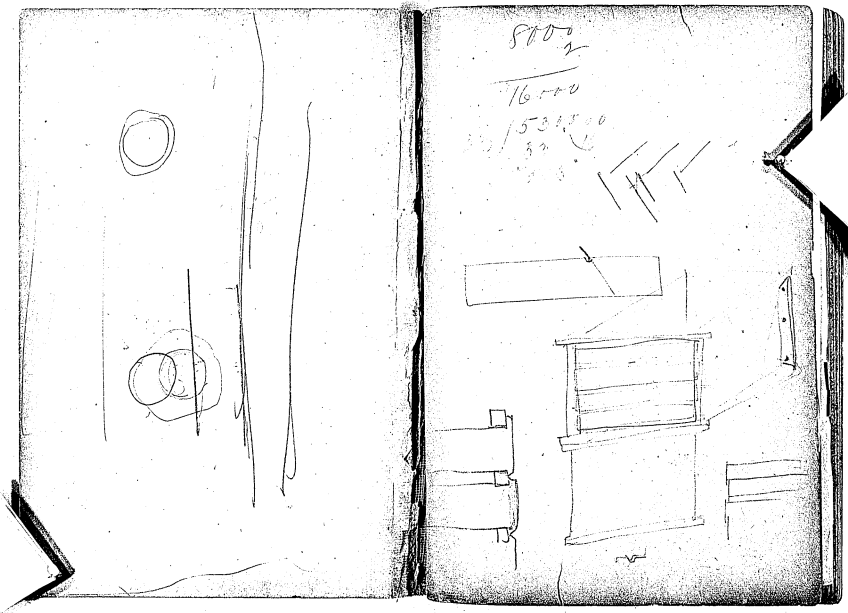
Conc. 62.08.
Wet, dust



A - $2\frac{11}{16}$
B - $2\frac{9}{16}$
C - $4\frac{13}{16}$
D - $2\frac{7}{8}$
E - $2\frac{7}{8}$
F - $5\frac{3}{4}$
G - $18\frac{1}{4}$
H - $2\frac{1}{2}$
I - 7"
J - 3
K - $1\frac{1}{2}$
L - $\frac{3}{8}$

X = is point at which strip from R.F. strucn deflecting board

[THIS BOOK WAS USED IN BOTH DIRECTIONS.
THE FOLLOWING PAGES WERE FILMED FROM
THE BACK END FORWARD.]



126

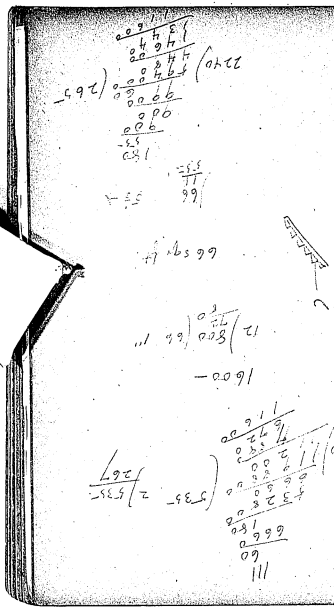
45
31
45
135
395

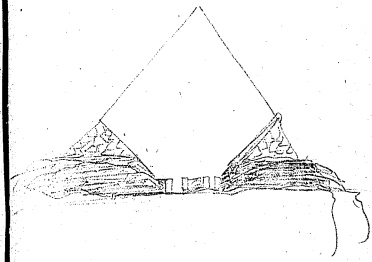
83

2240
1395
8480

2240) 67600 (30 tm
67200
400
20
600

600
3
67) 1800 (26
134
465
402
63





15"
7"
2"
½"
2"

1600 — ½

800 1

66 — 1 ft

$\frac{1}{2}$ $\frac{1}{2}$ —

180

4400

$\frac{1}{2}$ $\frac{1}{2}$

9900

9900

5400

4860

540

1440

1320

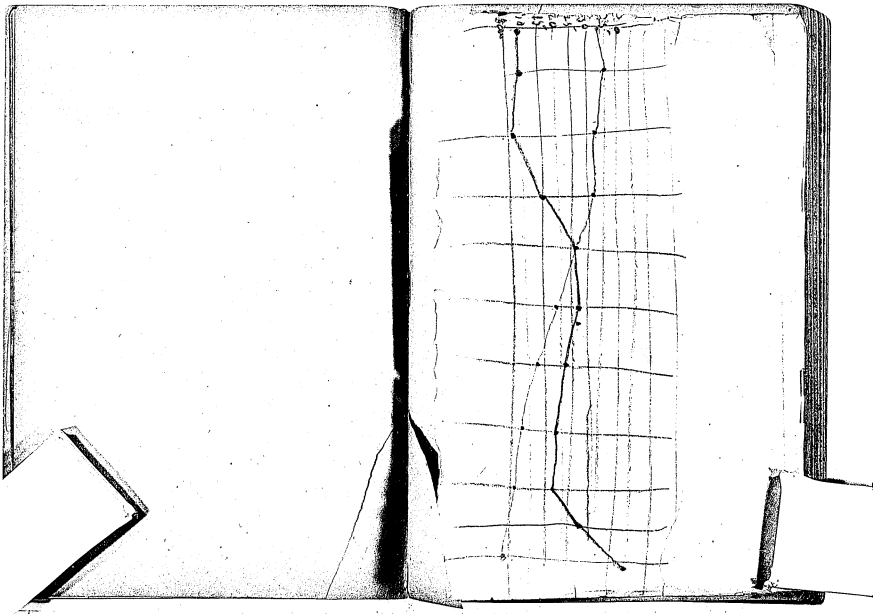
120

2240) 265 —

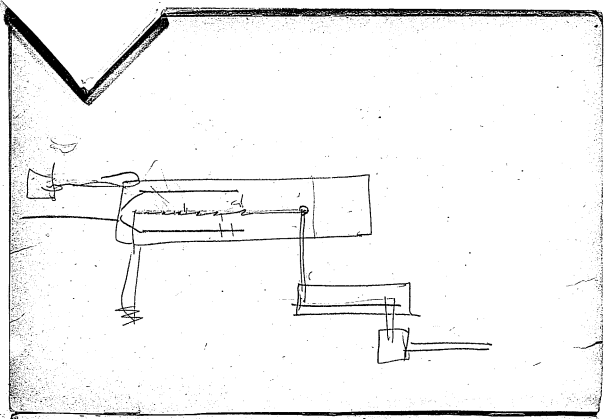
Joe Baggs

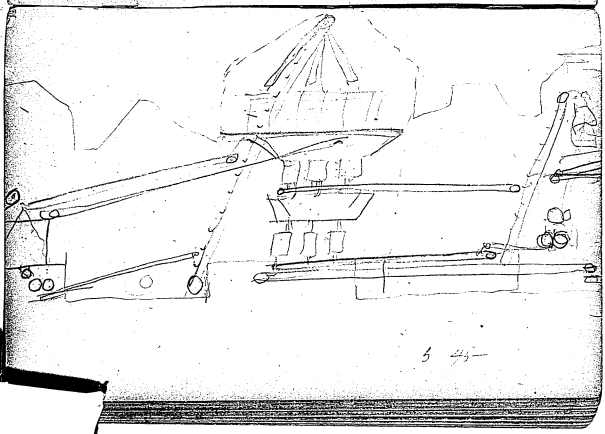
the Butcher

Giant. 6 ft dia 5 ft. face = 1.
Dut. 4 ft " 4 ft " = 1.
Baby. 3 ft. " 3 ft. " = 1.
Microbe 2 ft " 2 ft " = 2.
Fine Babies 3 ft. " 3 ft. " = 4.



Original





5 45

2530
7500 (21.
350) 7500
7000
500

125
18
1000
125
746) 2250
3.

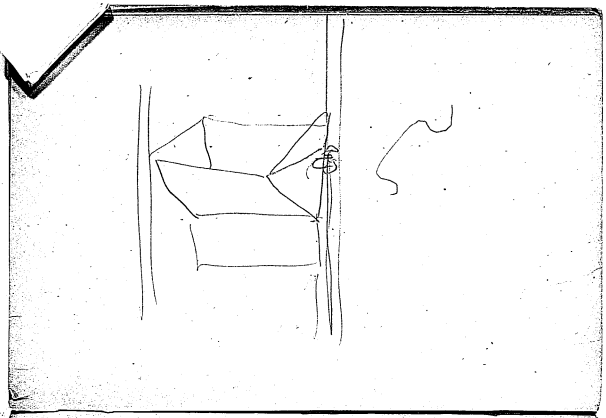
5 145
18
1160
145
1610
2
40.

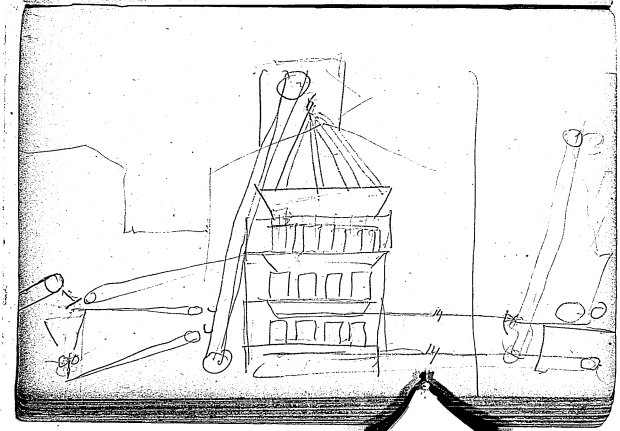
746) 10000 (130.
746
2540

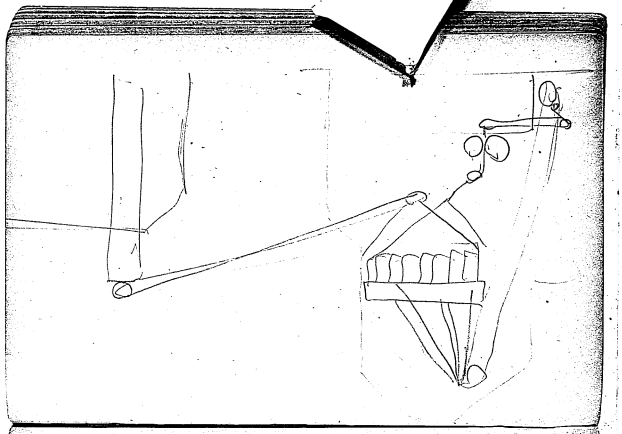
12. Bar.

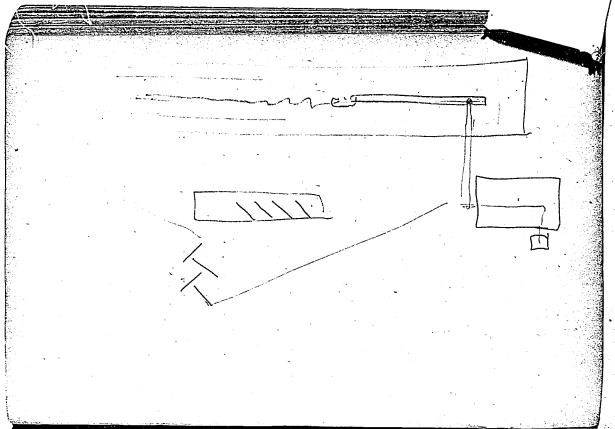
125
18
1000
125
1250

12-Bar 125-18 ———— 40.
26 Bells 145-18. ———— 50
50 Arcs - = ———— 50.
100 Duc. = ———— 15.
155









Plant Operations Notebook, N-93-05-22

This notebook covers the period May 1893-August 1895. It was used primarily by Joseph W. Harris for notes, calculations, and drawings from bricking experiments. The book reflects Edison's own involvement through marginalia in Edison's hand and notes by Harris regarding Edison's individual experiments. Among the more unusual experiments is a test to determine whether the bricks "could be used [as] a substitute for building and paving bricks." The front cover is labeled "Data on Bricking Iron Ore Concentrate" and "Bricking Data & Muck." The spine is labeled "Data of Later Bricking Work." The pages are unnumbered. Approximately 120 pages have been used. A one-page letter from Harris to Edison has been inserted into the book.

XE-172 N-93-05-22

Joseph W. Harris

Laboratory Note Book.

Record of time required to bake bricks of one to the correct point, and of time required to cool off, after removed from ovens.

Four bricks to a number, each set of bricks on a bed of about 1/4" of ore, to prevent burning.

material, 30 resin
15 Lima Petroleum
45 lbs mixture to 2240 ore
= 1 - 50

#1

Temp. when put in 230°F — Time in 4.35
Time out 4.40
Impeller removed 310°F — Total time 0.5
Time when cold 5.05

#2

Temp 230°F — Time in 4.35
" 330°F — Time out 4.45
Total time 0.10
Time when cold 5.10

3

Temp 230°F Time in 4.35
" 330°F Time out 4.50
Total time 0.15
Time when cold 5.15

4

Temp 230°F Time in 4.35
" 340°F Time out 4.55
Total time 0.20
Time when cold 5.20

5

Temp. 230°F Time in 4.35
" 350°F. Time out 5.00
Total Time 0.25
Time when cold 5.30

6

Temp. 230°F Time in 4.35
370°F Time out 5.05
Total time 0.30
Time when cold 5.35

7

Temp 230°F Time in 4.35
" 372°F Time out 5.10
Total time 0.35
Time when cold 5.40

8

Temp 230°F Time in 4.35
" 376°F Time out 5.15
Total time. 0.40
Time when cold 5.45

9

Temp. 230°F Time in 4.35
" 375°F Time out 5.20
Total Time 0.45
Time when cold 5.55

10

Temp 230°F Time in 4.35
" 376°F Time out 5.25
Total Time 0.50
Time when cold 6.00

11

Temp 230°F Time in 4.35
" 370°F Time out 5.30
Total Time 0.55
Time when cold 6.05

12

Temp. 230°F Time in 4.35
380°F Time out 5.35
Total Time 0.60
Time when cold 6.10

Earlier record of taking tests, with notes by Mr. Edison.

#1
Temp 342°F
Time 5
Taken away 5.40
very soft

#2
Temp 370°F
Time 10
very soft
MAE

#3
Temp 370°F
Time 15
Soft, & Crumbles
Fair
would do E

#4
Temp 376°F
Time 10
Stood my weight
Could not break with fingers &
not so soft, but
crumbles

#5
Temp 382
Time 25
better. would not stand weight
not so soft
still crumbles.

#6
Temp 380
Time 30
Stood my weight
End on off
getting hard -
not so much
crumbling -
Very hard
Unnecessarily hard

#7
Temp 380
Time 35
further on
they got little
softer

#8
Temp 380°F
Time 40

#9
Temp 380°F
Time 45

Temp #10 378
Time 50

Temp #11
Temp — 382
Time 55
43 [illegible] [illegible] Cold

Temp #12
Temp. 390°7
Time 60

Temp #13
Temp. 386
Time 65
Taken out at 6.40
23 minutes
just only
[illegible]
warm

Assay of Lima petroleum for Sulphur.

100 cc. (82.7 grams) treated with HNO_3 until all is oxidized, residue dissolved in caustic Potash free from sulphur acidified with Hcl, ppd. with $BaCl_2$, filtered, filter fused with Na_2CO_3, redissolved in Hcl & added $BaCl_2$, filtered, filter dried, and detached from paper. Paper ignited in weighed crucible reduced to ash, $BaSO_4$ added, heated to dull red heat, weighed.

Weight of $BaSO_4$ minus ash, 0.435 grams

contains 0.0725 % Sulphur.

Estimation of residue in Lima Petroleum.

22.720 grams pet. placed in weighed dish, heated on sand bath for a week, until all had been carbonized residue weighed 0.830 grams =

3.653 % residue.

Examination of Rosin for Acids.

Sample of a very clear rosin, probably "X" or "W" taken as standard, and assumed to be 100% pure, as it gave no insoluble residue. = 20.0 cc of alkaline solution.

Sample of regular "B" rosin used, and neutralized with same soda solution, = 19.3 cc, or 96.5%

Sample of dross rosin, neutralized with same ~~soda~~ solution, = 17.7 cc. = 88.5%

Dross rosin gave 0.234 grams of insoluble matter, such as sand & chips, in 2 grams of rosin = 12.7%

or with clear rosin as standard, the dross rosin = 101.2%, the clear rosin probably = 99%.

With B rosin as standard, dross rosin = 91.7% pure.

Experiments on mixing the
ore with muck in the machine.

#1

30 lbs Rosin
15 lbs Burning oil, the rosin
dissolved in the oil.

Ore at a temperature of 225 °F.
mixed very well. O.K.

#2

30 lbs Rosin dissolved in
15 " Lima Oil

Ore at 200 °F.

O.K.

#3

30 lbs Rosin dissolved in
12 " Lima Oil

Ore cold

did not mix at all.
no good.

#4

30 lbs rosin dissolved in
12 " Lima Oil

Ore at 120° F.

did not mix very well.

5

30 lbs Rosin dissolved in
15 lbs Lima Oil

Che cold

no good.

6

30 lbs Rosin dissolved in
12 " Lima Oil

Che at 150 °F,

mixed very well, O. K.

Examination of a sample of crude rosin strained through burlap.

2 grams used = 15.5 cc = 77.5 %
or, compared with "B" rosin = 80.31 %

Examination of a sample of Chips from Rosin works, for rosin

100 grams, dissolved in CH_4O, filtered, treated with Na_2O, CH_4O evaporated off, acidified, filtered, washed + melted, melted mass weighed 52 grams

52 % Rosin

May 22nd 1893

Experiments with bricks of ore, made with
30 lbs Rain, 15 lbs Lima Petroleum, (L)
30 " " 15 " Perma " (P)
30 " " 15 " Bayone " (B)

6 bricks of each kind made, and heated to 350° F. one of each taken out every 10 minutes, to find out which oil distills off first, and basis the brick bond.

45 lbs mixture, to 2250 lbs ore = 1 – 50

Bricks set on tin plates, and arranged as follows, each kind represented by the letters.

10	20	30	40	50	60 minutes.
L	P	B	L	P	B
B	L	P	B	L	P
P	B	L	P	B	L
1	2	3	4	5	6

1

10 minutes, Temp in 354° F
3.30 – 3.40 P.M. out 310° F
Cool at 4.00 P.M.

1 (duplicate)

15 minutes. — Temp in 388° F
3.10 – 3.20 P.M. out 336° F
Cool at 4.00 P.M.

On putting all bricks in oven, temp. fell to 300° F.

L Best
P next
B third

2

20 minutes Temp in 354° F
3.30 – 3.50 P.M. out 312° F
Cool at 4.08 P.M.

2 (duplicate)

20 minutes. Temp in 388° F
3.10 – 3.30 P.M. out 354° F
Cool at
4.10 P.M.
L Best
P next
B third

L is apparently hard enough for Practice

3

30 minutes — Temp. in 358° 7, out 330° 7

3.30 - 4.00 P.M.

Cool at 4.22 P.M.

#3 (Duplicate)

30 minutes — Temp. in 388° 7, out 368° 7

3.10 - 3.40 P.M.

Cool at 4.20 P.M.

L one side seen and well does not crush with Mus.E - weight, as effect under bell

P Half island Mus.E - weight

Both lack weight.

B quite strong not so good as L or P

L in air at 20 or 40 minutes is crushed.

Bazine will not answer —

4

40 minutes — Temp. in 354° 7, out 350° 7

3.30 - 4.10 P.M.

Cool at 4.35 P.M.

#4 (Duplicate)

40 Minutes — Temp. in 388° 7, out 370° 7

3.10 - 3.50 P.M.

Cool at 4.25 P.M.

L

P

B much softer than L or P

Piece

L in Put in Turpentine + Kerosene in 5 minutes, that in Turpentine had begun to fall to pieces, while that in Kerosene did not show any signs of crumbling.

5

50 minutes — Temp in 354°7

3.30 – 4.20 P.M. out 358°7

Cool at 4.45 P.M.

5 (Duplicate)

50 minutes — Temp in 388°7

3.10 – 4.00 P.M. out 370°7

Cool at 4.37 P.M.

L

P.

B softer than L or P

P. put in H_2O out 6.45 P.M. May 23 – at 6.30 Am May 24, was still whole and looked as if it was impervious to water.

6

60 minutes — Temp in 354°7

3.30 – 4.30 P.M. out 360°7

Cool at 5.00 P.M.

6 Duplicate

60 minutes — Temp in 388°7

3.10 – 4.10 P.M. out 370°7

Cool at 4.45 P.M.

L.

P.

B softer than L or P.

L – Put in H_2O at 6.45 P.M. May 23 – at 6.30 Am May 24, was still whole and looked as if it was impervious to water

8,00 | 22,49 | 2.8 per cent
7,6 4,00

28 | 3,50
7,22 0

Experiments on reheating bricks to ascertain if they soften again. May 24th 1893

at 4.20 P.M.

2 L (20 minutes) softens at 300°F.
4 P (40 minutes) " " 420°F

at 320°F, #5 B (50 minutes) was put in, was very soft at 470°F.

at 490°F, all very soft.

Experiments on Black petroleum residue mixed with Lima Oil.

25 B.P.R. (Black petroleum residue) (Sludge Acid)
5 L. Oil } 30 lbs per 2240 lbs ore

#1 15 minutes soft
#2 30 " hard
#3 45 " "
#4 60 " "

Mixed cold, not very sticky, made good brix.

20 B.P.R. (Black petroleum residue) (Sludge Acid)
10 L. Oil } 30 lbs per 2240 lbs ore

2 brix
1 20 minutes hard
2 40 " "

mixed cold – not as sticky as above – did not make good brix.

3 of the 5-25 mixture heated to a Red heat in the muffle for over one hour and 20 minutes after which, and during which time, it remained perfectly hard + solid.

May 24th 1843

Made 3 bricks of 45-2240 with Resin + Lime Calc + heated to 500°F for

500°F # 1	20 minutes,	soft,
500°F # 2	40 "	hard.
500°F # 3	60 "	hard.

1 put back again for 1 hour longer = 80 minutes

2 was allowed to cool, + placed in muffle, to heat it up to a red heat. It was continually rubbed while being heated, and did not soften.

Experiment on brieking, with sluge
May 26th 1893
acid tar and Lima Petroleum,
in the proportion of 30 lbs sluge acid
and 5 lbs Lima = 35 lbs per ton
Started 10.40 AM.

3 brix made –
heated to 400°F + taken out at
furnace at 410°F.

#1 – 20 minutes taken out at 11.00 AM. at 390°F
#2 – 40 " " " 11.20 " 395°F
#3 – 00 " " " 11.40 " °F

#1 very soft when removed
#2 " " " "
#3 hard, but could be harder

June 3rd 1893

Experiment on brick made with 30
lbs sluge acid tar, + 10 lbs Lima
Petroleum, to 2240 lbs ore –

Brick made in small mold,
heated to 500°F, for 60 minutes.
After cooling, was very hard,
it weighed 169.250 grams –
It was then placed in water for 47
hours, during which time, it did
not soften nor crumble. After
removing, and drying between
blotting paper, it weighed

173.400 grams
169.250 "
4.150 ∴ water

169.250) 4.150000000 (
2.44

took up 2.44 % of water in
47 hours.

June 5th 1893

Experiments to determine the most economical proportion between time and temperature at which the briq of iron ore must be baked, using the 30 & 10 mixture of sluge acid and lima petroleum

The experiments are divided into Series each separate series denoted by a letter, each letter represents a temperature at which the furnace is supposed to be kept.

Series	A	— 450 °F
"	B	500 °F
"	C	550 °F
"	D	600 °F
"	E	650 °F
"	F	700 °F

Series A - 450 °F -

Brick removed from furnace every 15 minutes.

No.	minutes -	temp.	quality -
# 1	15	410	soft
2	30	422	"
3	45	438	hard
4	60	440	"

1 not hard enough, even after cooling for several hours also all the volatile substances had not been driven off.

Series B - 500° F -

Brick removed every 10 minutes.

no	minutes	Temp.	quality
1	10	420°F	soft
2	20	456°F	"
3	30	465°F	"
4	40	492°F	hard
5	50	478°F	"
6	60	476°F	"

Nos. 5 and 6 are all right
#5 stopped giving off volatile gases.

each took 40-45 minutes to cool.

#6 is the brick used in the water experiment.

numbers 5 + 6 are all right.

Series C. 550°F

Brick removed every 10 minutes

no	minutes	Temp.	quality
1	10	440	soft
2	20	486	"
3	30	500	"
4	40	510	hard
5	50	495	"
6	60	495	"

#5 does not give off volatile gases.

Temp. fell rapidly towards close of expt.

Series D - 600°7 -

brick removed every 5 minutes.

No	minute	Temp.	Quality
1	5		soft
2	10		"
3	15		"
4	20		"
5	25	no guess given off	hard
6	30		"
7	35		"
8	40		"
9	45		"
10	50		Oxidized
11	55		"
12	60		"

Could not measure temp. by thermometer, expt. performed in muffle furnace.

Series E - 650°7

Brick removed every 5 minutes.

No	minute	Temp	Quality
1	5		soft
2	10		"
3	15		"
4	20		"
5	25	no guess given off	hard
6	30		"
7	35		"
8	40		"
9	45		"
10	50		Oxidized
11	55		"
12	60		"

Could not measure temp.

Expt made in muffle furnace.

Series F. 700 °F

brick removed every 3 minutes.

No	minutes	temp	Quality
1	3		
2	6		soft
3	9		very
4	12		soft
5	15		~~[illegible]~~ hard
6	18		harder.
7	21		
8	24	no gases given off	
9	27	some gas given off	
10	30	gases given off	soft
11	33	no gases	hard
12	36	no gases	hard
13	39	some gases	little soft
14	42	no gases	hard
15	45	oxidized	
16	48	"	
17	51	"	
18	54	"	
19	57		
20	60		

The giving off of gases during the middle of run is due to the brick being near the muffle door, & therefore not being heated as much.

Notes on the above bricks, by Mr. Edison

Series A

(not satisfactory Hopkins) #4 would do (but all volatile substances have not been driven off Hopkins)

Series B –

#5 + #6 will answer

Series C –

20 minutes 6 feet up, broke little very little fuse, not strong, but would answer if nothing bet

Series C - (continued)

30 minute — 8 feet, broke in two or three pieces, seems hard by hand very little fines, well do

40 minute — Seems very hard, 8 feet, 3 pieces, no fines

50 minute — 8 feet - 2 pieces no fines

60 Minute - 8 feet - did not break. very hard -

Series D -

~~40~~ 5 minute — all soft

10 min. — fair - 3 feet - broke, 3 pieces, + some fines.

15 min. — Hard 8 feet - 2 pieces no fines -

20 min — 8 feet - did not break - hard

25 min. — broke - 8 feet, fines, probably oxidized in muffle -

30 min — all went to powder.

35 min. — 8 feet 2 pieces no fines -

40 min — 3 pieces 8 feet, no fines -

45 - min — Powered, I find on looking at it, is oxidized.

50 min — 8 feet did not break.

55 min — Oxidized, went to powder -

Series E –

5 min. soft

10 min – 2 pieces, 8 feet very little powder.

15 min 3 pieces little soft in middle, would do

20 min 3 pieces, 8 feet no fume –

25 min 5 pieces, no fumes, notice it is oxidized

remainder seem to be oxydized.

A number of experiments were made with different mesh tails from magnetic or concentrates, from Edison, N.J., during Sept - 1893.

Tails were mixed in varying proportions with (a mixture of 30 lbs) Rosin and 15 lbs. Penna petroleum (which gave better results in preliminary experiments than either Lima Petroleum, or Sludge Acid) all the way from 30 lbs of mixture per ton to 150 lbs mixture per ton.

The tails used were 14 mesh crude ore, 50 mesh tails, 50 mesh Concentrates, bin dust, & blower dust from this bin dust.

The best results are as follows. The bricks after baking in a box filled with charcoal, for about 2 hours, at 600°F, were thrown up in the air by Mr. Edison, and fell on the asphalt pavement of the chemical room.

150 lbs rosin mixture, 1 ton 50 mesh tails

(notes) did not break at 5 feet, not at 10 feet. broke at 25 feet, probably good at 15 feet

125 lbs rosin mixture, 1 ton of dust from bins.

did not break at 4 feet, nor at 10 feet, nor
(notes) at 30 feet, chipped at second trial at 30 feet, very hard.

100 lbs of rosin mixture, 1 ton of dust blown from bin dust -

chipped at 10 feet, broke at 25 feet, duplicate broke at 20 feet, is hard.

125 lbs rosin mixture, 1 ton of dust blown from bin dust.

did not break at 4 feet, chipped badly at 10 feet, duplicate chipped at 20 feet, broke at 30 feet, very dense

150 lbs rosin mixture, 1 ton of dust from bin dust,

chipped at 5 feet, did not break further at 20 feet, duplicate broke at 20 feet, hard and dense.

The remainder of experiments were, practically, no good. They broke all to pieces at distances between 4 and 12 feet, some even broke from a fall of 3 feet.

Sept - 15th 1913

Some 50 mesh tails were mixed with the regular 30 lbs Rosin and 15 lbs Pennsylvania Petroleum mixture (Lima, did not answer as well) in proportions from 40 lbs to 120 lbs of mixture to 1 ton of tails.

The 120 lbs per ton was found to be necessary. The bricks intended to be baked at different high temperatures in a furnace, to see if they could be used as a substitute for building and facing bricks.

4 of the 120 lbs per ton bricks were placed each in a ~~carbon~~ graphite crucible and surrounded with charcoal, and placed in large furnace in Room 3 - ~~4th~~ and heated to an orange heat, when the 1st was removed (sufficient time being allowed to get hot all through in each case) the second

was removed at a yellow heat, the third at a low white heat, and the 4th at a bright white heat.

After cooling 36 hours, they were opened, the 1st was like or much sand, the second was just beginning to harden but was still very crumbly, the third was hard, tough, but very porous inside. The fourth had all contracted out of shape, was full of large holes caused by the feldspar melting and ~~running~~ running together, leaving spaces, but was very hard.

The third is the best. By all means, is hard, had not lost its shape very much, but was porous.

The experiment was repeated without the use of charcoal in the crucible, then bricks cracked and crumbled very easily between the fingers.

Oct 10th 1893

About 100 large flat bricks of the following shape,

were made of regular Baltimore Sludge Acid and Lima-Petroleum, (30 + 10) when it was found that after baking they absorbed water. Before baking, the mixture was not so sticky as formerly. This is due to the slow oxidation of the sludge. If this sludge be mixed in the proportion of 30 lbs to 5 lbs of Lima Petroleum, and 40 lbs of the mixture used, it makes a good strong water-repellant brick, when heated for 1 hour at 400°F. After an immersion of 17¼ hours a brick made as above absorbed 0.88% of water. If heated to 400°F for 30 minutes, absorbs 8.9% H_2O in 22½ hours.

Oct 11th 1893

Experiments were made with Burns' sample of sludge acid H_{10}, from the Kings County works of the Standard Oil Co, for bricking, without the use of Lime. It is done by first mixing the sludge with say 1/3 of the ore, and then mixing this in with the rest of the ore.

When bricked, before baking, it absorbs water, and also after baking.

If only heated to 400°F, for 1 hour, do not take up much water, if heated to 500°F take up still less water, but if heated to 600°F, takes up considerable water.

Bricks made in screw press.

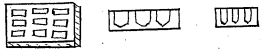
Heated to 400°F for 45 minutes, cooled, and placed in water for 45 hours, took up 4.05% of water

Heated to 500°F for 45 minutes cooled, placed in H_2O for 47 hours. took up 2.05% H_2O

Oct 16th 1893

Brick made with Baltimore sludge and Lime, 30 lbs sludge, 5 lbs lime, 40 lbs mixture per ton of ore.

made in a mould shaped as follows



This brick made in screw press with a gentle pressure, heated to 395°F for 1 hour + 10 minutes. When removed, gave off no vapors, but was not hard, being still soft to the pressure of the tongs.

A brick made in other mould (see Oct 18) and made under similar conditions, except that a much greater pressure was applied, was fully 3 times as hard.

Experiments made on
Burns's samples of Sludge acid.

1

Brick made with 45 lbs of a mixture of 40 lbs #10 sludge, 5 lbs Lima. mixes well, does not 'flow', when bricked in hand mould, cracks in half as water bricks do.

2

Brick made with 50 lbs of 45 lbs sludge, 5 lbs lima. mixes well, 'flows' a little, is not sticky cracks in hand mould and takes up water before baking.

Determination of loss of weight occasioned by washing #10 sludge until it is free from H_2SO_4.
Cold water only, used.

Weight of	
evaporating dish,	34.852 grams
sludge and dish,	38.074 "
Sludge	3.222 "
Glass rod	3.202 "
Dish, Sludge, and rod	41.276 "
Dish, sludge, and rod after washing	40.244 "
Loss in weight,	1.032 "

Weight of sludge before washing	3.222 "
Loss in weight	1.032 "
Weight of sludge after washing	2.190

Loss 32 %

In another case, lost nearly 50 %.

Oct 16th 1893

Some #10 sludge acid was washed until it no longer gave any acid reaction and was then heated in the steam bath to drive off all the water, or it does not make sticky bricks. It is not a very sticky substance, after drying.

6

Brick made with 45 lbs of 40 lbs washed #10 sludge and 5 lbs lime mixed well, flows, made in screw press, was water repellant before heating.

Heated to 395° F for 1 hour + 10 minutes.

after cooling, was immersed in water for 45 hours, absorbed 2.6%

7

Brick made with 40 lbs of a mixture of 50 lbs washed #10 sludge, 5 lbs lime. Mixed in sections, mixes well, flows fairly well, bricked in hand mould.

absorbed water before heating

baked at 400° F for 1 hour, hard when removed.

Immersed in water for 23 1/4 hours absorbed 1.25 %.

8

Brick made with 50 lbs #10 washed sludge alone, mixed in sections. not good, very dry, would probably require 125 lbs per ton to be any good.

#9

Brick made with 40 lbs of a mix lime of 35 lbs washed and dried #12 sludge, 5 lbs lime.
mixes well, fairly sticky, bricks well, is quite strong, but absorbs water before baking.
Heated to 400° F for 1 hour.

Immersed in water for 23½ hours absorbed 2.02 %

#10

40 lbs of 30 lbs #11 sludge and 10 lbs lime.

no good, too stiff, even when mixed in sections.

#11

45 lbs of 30 lbs #11 sludge, 15 lbs lime.

Sludge seems to have oxidized, as it is not now completely soluble in Lime.

Is not sticky when mixed with the ore and when made in hand mould by hand, cracks as water bricks.

made in screw press appears to be all right.

Made in screw press.

heated to 410° F for 1 hour, gave off some vapors when removed.

Immersed in water for 12 hours absorbed 1.73 %

12

42 lbs of 30 lbs #11 sludge,
12 lbs lime.
mixed well. flow,
bricked by hand & plate.
bricked in screw press, is all
right. is water repellant before
baking. Made in screw press
Heated to 400 for 1 hour, did
not give off vapor on removing
from the furnace.

Immersed in water for 12 hours
absorbed 1.64 %

13

40 lbs of 35 lbs #1 sludge,
5 lbs lime
mixed well, flow well, is sticky
is water repellant before baking.
Brick made by hand.
heated to 4 10°F for 1 hour
still gave off vapor when removed
from the furnace.

Immersed in water for 18 1/4
hours, absorbed 1.3 %

#14

50 lbs of 30 lbs #11 sludge, 12 lbs lime

mixes well, flows, does not crack when made by hammer in small mould.

brick made by hand

heated to 410°F for 1 hour.

When removed, still gave off gases.

immersed in water for 18¼ hours,

absorbed 2.26%

#15

45 lbs of 30 lbs #11 sludge and 12 lbs Lime.

mixes fair, flows fair, is not very sticky, has a tendency to crack when made by the hammer in small mould.

Did not water repellant before heating, although the surface becomes wet.

Bricked by hand.

heated to 410°F for 1 hour.

immersed in water for 18¼ hours,

absorbed 2.35%.

16

75 lbs # 27 sludge residue
well ground up, to 1 ton ore.

no good

17

90 lbs of 75 lbs # 27 sludge, 5 lbs lime
1 ton ore.

no good.

18

60 lbs ~~#~~ of 50 lbs # 27 sludge and
10 lbs crude molasses.

no good

19

50 lbs # 19 sludge
1 ton ore -

no good.

20

55 lbs of 50 lbs # 19 sludge
5 lbs lime -
1 ton ore

no good.

24

100 lbs # 19 sludge
1 ton ore

mixes well can be bricked, but
brick is weak, and absorbs water
before heating

25

105 lbs of 100 lbs #19 sludge
5 lbs Lima –

1 ton re –

mixes well bricks well, is weak and absorbs water.

A number of experiments were made with washed # 27 sludge, small portions being ground and heated with equal weights of over 50 different inorganic salts and compounds, the mixtures afterwards tested for solubility in Penna Petroleum, and water.

Bricks were also made with some of the more promising mixtures, but not one of them gave any satisfactory results. The sludge did not seem to combine with any of them, and separated in the petroleum each time.

Bricks made with them would not hold their shape on removing from the mould. They all fell to pieces.

Oct 26th 1893

Experiments made w/ leaching ore with H_2SO_4

Mr. Edison poured some strong H_2SO_4 w/ some ore, and left it to stand over night. In the morning it had caked to a very hard mass, and was broken with difficulty by hand.

#1

1 ton ore
100 lbs of a 10% sol of H_2SO_4 by weight
mixed in mortar, and heated on sand bath –

no good.

#2

1 ton ore,
50 lbs 10% sol H_2SO_4
mixed in mortar, heated w/ sand bath – no good

#3

1 ton ore
50 lbs of a 20% sol H_2SO_4
no good

#4

1 ton ore
25 lbs of a 20% sol H_2SO_4
no good

#5

1 ton ore
50 lbs of a 40% sol H_2SO_4

#6

1 ton ore
100 lbs of a 50% sol crystalized $FeSO_4$
no good

#7

1 ton ore
25 lbs H_2SO_4 sp.g. 1.66

#8

1 ton ore
50 lbs of a 50% sol crystalized $FeSO_4$
no good

#9

1 ton ore
25 lbs of a 50% sol $FeSO_4$
no good

#10

1 ton ore
150-200 lbs conc sol $Al_2(SO_4)_3$
no good

#11

1 ton ore -
100 lbs of a 25% sol $Al_2(SO_4)_3$
no good

#12

1 ton ore
200 lbs of a 20% sol H_2SO_4
acid poured on ore -

#13

1 ton ore
300 lbs of a 10% sol H_2SO_4
acid poured on.

~~Oct~~ Nov 6th 1893

Mr Edison mixed some conc H_2SO_4 with some ore (did not weigh) and placed it in a long wide glass tube, open at both ends, but a piece of asbestos cloth tied over the bottom to act as a filter. Some refined kerosene to which H_2SO_4 had been added, & then the purified kerosene filtered off, was then poured on the ore, so that it had about an equal volume as the ore. The tube was in a vertical position.

In two hours, the ore expanded in volume, cracked the tube, the kerosene ran through the cracks in the glass, but the ore had caked into a solid mass, which could hardly be broken with a hammer. Mr. Edison thinks a Calcium-Hypo-sulphite was formed.

Nov. 6th 1893

Some 300 bricks were made of a mixture of 30 lbs Baltimore sludge, 5 lbs of Lima Petroleum, 40 lbs per ton of ore used.

Bricks made in large square mould in screw press, two young men operated the press.

One was heated to 400°F for 1 hour when removed vapors were still given off, and was soft.

Some were heated to 500°F for 1 hour were not quite hard when removed and still gave off vapors of petroleum.

Remainder were heated to 520°F until no more vapors came off. It required 3 hours to do this.

When cold, one brick was thrown in the air as follows

6 feet did not break
12 " " " "
25 " " " "
75 " " " " but it chipped a little at the corners.

In each case the bricks fell on a wood floor.

In heating the bricks, vapors do not seem to be given off as heavy fumes until after a temp of 425°F had been reached, so at 400°F only after a much longer time.

A portion of one placed in water for 23 hours, absorbed 4.4%

Nov 8th 1893

Some bricks were made with 4 oz of 30 lbs Baltimore sludge and 5 lbs Lima to 1 ton ore.

Made in screw press.

Water note the surface before heating.

Heated to 500° F for 1 hour, still gave off fumes when removed.

One thrown as high as main Laboratory, fell on wood floor did not break, thrown up again, and did not break.

Portion of one placed in water for 24 hours, absorbed 3.46 %

These bricks shipped to
Pilling & Crane
Bullitt Bldg.
Philada.

Nov. 9th 1893

Some bricks were heated to different temperatures for different lengths of time, and then tested for water.

#1

Brick heated to 500° F for 1 hour, did not give off gases on removing from the furnace, was hard.
Placed in water for 22 hours, absorbed 6.34 %.

#2

Brick heated to 450° F for 1 hour, still gave off gases on removing from furnace, was hard.
Placed in water for 22 hours, absorbed 2.44 %

#3

Brick heated to 400° F for 1 hour still gave off gases when removed from the furnace. was not very hard.
Placed in water for 22 hours, absorbed 3.12 %

#4

Brick heated to 400° F for 1½ hours still gave off gases on removing from the furnace. was hard.
Placed in water for 22 hours, absorbed 2.1 %

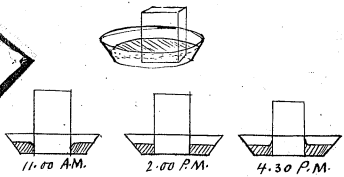
#5

Brick heated to 400° F for 2 hours did not give off any gases on removing from the furnace. was hard.
Placed in water for 22 hours, absorbed 2.84 %

all these bricks were thrown up to a heighth of about 50 feet and fell on wood, they all broke, #3 broke in small pieces, the remainder in large pieces.

Nov. 11th 1893

An unbaked brick placed in water as shown in sketch, to see if it absorbed much, and what the rate was.



Brick placed in water at 11.00 Am.
There was considerable repulsion betwen the brick and the water
at 2.00 P.M. The water was level at the edge of the brick
at 4.30 P.M. There was considerable attraction betwen the water and the brick.
At the end of three days, the brick had absorbed a very large quantity of water, it was wet all over.

March 7th 1894 -

Experiments were made with a view to reducing power required in mixing, by adding petroleum to the ore, then mixing a portion of the ore, say 1/3, with the juices, then add the balance of the ore.

2240 lbs ore
6 lbs Lima oil = 2 cts
22½ " 100 Rosin, 50 lima = 10 cts.

Mixes easily, but will not brick.

Tried naphtha, gasoline + Kerosene, they were not successful, naphtha evaporated to rapidly, gasoline the same, Kerosene reduced mixing a little, but did not make good bricks, it also evaporated soon.
Also tried Rosin Oil, it is to difficult to mix.

March 8th 1894

Experiments made with Rosin Oil & Rosin in Place of Lima Oil + Rosin.

Rosin Oil,
Sp. G. 0.99, cost 6 cts per gal.
= 0.75 pts per lb, = 1.33 lbs per 1 ct.

#1
10 grams Rosin,
1 " Rosin Oil } Solid when cold

#2 10 grams Rosin
2 " Rosin Oil } solid when cold

#3
10 grams Rosin
3 " Rosin Oil } solid when cold,

#4 10 grams Rosin
4 " Rosin Oil } very stiff when cold,

#5
10 grams Rosin
5 " Rosin Oil. } very stiff when cold, cost 29% more than 10 Rosin 50 lima.

#6
10 grams Rosin
6 " Rosin Oil } So stiff when cold!

March 9th 1894

Scotch Blast furnace pitch costs
about $8.00 per ton, 2240 lbs.

It is insoluble in
Lima Petroleum, Penna Petroleum,
refined Kerosene, benzine, naphtha, gasline.

It is partly soluble in
Rosin Oil, Turpentine, Wood tar Oil.

(The part which is insoluble in these, is probably the lampblack, of which the pitch contains about 30 %.)

Experiment made with
10 lbs Pitch
5 " Rosin Oil.
12 ozs wash, = 26 lbs per ton,
to difficult to mix, not very good after it is mixed well.

10 lbs Pitch,
10 " Rosin Oil,
12 ozs wash, = 22.34 lbs per ton,
hard to mix, after mixing is to dry, can not brick it in hand.

Experiments with Coal Tar Pitch -

#1
Creosote Oil dissolves it.

#2
1 Part Rosin Oil, 1 Part Lima dissolve it while hot, but the pitch separates on cooling.

#3
Blue Oil dissolves it hot, separates on cooling, pitch seems to be rotten after separating, it has been acted upon while hot, by the acid in the oil.

#4
10 Parts Rosin Oil 1 Part lima dissolve it, but it is very sticky after cooling.

#5
1 Part of (100 Rosin, 50 lima) and 2 Parts lima dissolve pitch while hot, pitch separates on cooling.

#6
Acid oil from petroleum works does not dissolve it.

#7
Separated Oil from petroleum works does not dissolve it

#8

Is partly soluble in Red oil, but does not give a sticky mixture.

#9

Wood tar Oil dissolves it, and is a sticky mixture.

#10

Separated acid Oil treated with Na_2O in solution, + Pitch added + heated.

The Na_2O separates sludge from the acid oil, + this melts with the pitch, the same result is obtained when dry Soda Hydrate is heated with the acid oil, the Na_2O combines with an acid which is soluble in H_2O + gives a brown ppt with $BaCl_2$ is a sulphonic acid.

#11

Small quantity of creosote heated with pitch, is to stiff when cold, if diluted with more creosote is not sticky.

#12

Blue Oil, Soda, Pitch, pitch separates on cooling, and is rotten as in #3.

#13

1 Part wood tar Oil, 2 parts pitch, Too stiff.

Experiments with the Coke residue, from Sludge Acid.

Is soluble in an excess of hot water, and gives a brown ppt with $BaCl_2$

If this water solution, which gives an acid reaction to litmus, be mixed with HCl, Zn + Fe, + heated, in left some time in the cold, a sticky sludge is obtained, although it is not so good as fresh sludge.

If dry coke stuff be ground with Na_2CO_3 in excess, + then treated with HCl to dissolve excess of Na_2CO_3, then washed with water, a sticky sludge is obtained by treating the last residue with chloroform, Benzol, toluol, Turpentine, Carbon Disulphide,

This ~~resid~~ sludge is soluble in strong Carbolic acid none of the ordinary solvents seem to affect it.

If dry coke sludge be boiled in lime Petroleum for about 15 minutes a sludge having a high melting point, but brittle when cold, is produced. The lime probably takes up the free acid in the coke stuff, and makes fresh sludge which melts with the coke stuff.

March 19th 1894

A + rosin was poured in a dry linen bag, it filtered through the press.

H rosin was poured in a wet linen bag, it evaporated the water + then filtered through

H rosin was poured in a linen bag that had been soaked in a saturated solution of Na_2CO_3, it evaporated the water + left a crust of Na_2CO_3 which closed the pores of the linen + the rosin did not filter through.

Rosin can therefore be shipped in burlap bags by first soaking the bags in a saturated solution of a soda, say Na_2CO_3, + then pouring the hot rosin in. Bags can be recovered + returned for more rosin.

A number of experiments were made from time to time, in small mixer, with quantities of ore varying between 150 lbs to 500 lbs, with varying quantities of Rosin 100, Lime 50, juice. It was found that bricks can be successfully made with 12½ cts worth of juice, 11½ cts worth of juice, & 10 cts worth of juice, but not lower than 10 cts.

The ore will to require 8 mixings in the machine, as follows –

1st 1/3 ore, all of the juice.

2nd 1/3 ore added,

3rd 1/3 ore added,

and then total ore passed through 5 times more.

This is equivalent to 4 times through the big mixer.

Bricks made with 12½ cts juice were not tested for water absorption.

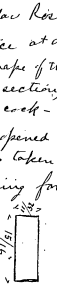
Tests made later show that 100 Rosin 62 Lime bricks absorb about 6.00% of water in 15 hours

March 26th, 1894

Experiments were made to determine the flow of Regular Rosin 100 Lima 50, juice through an orifice at different temperatures. The shape of the orifice was rectangular in section, and was the opening of a brass cock.

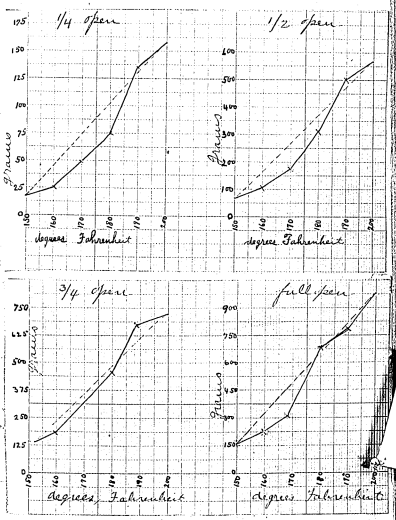
The cock was opened in 1/4 area periods, that is, a reading taken for 1/4, 1/2, 3/4, 1, each reading being for 10 seconds.

Area of opening.



Weight of juice in grams passed through the opening in 10 seconds at different openings & temperatures.

Temp	1/4	Temp	1/2	Temp	3/4	Temp	Full
150°F	16½	150°F	71	152°F	147	150°F	162
160	26	160°	117	160°	187	160°	230
170	50	170°	176			170°	315
180	74	180°	311	180°	462	180°	686
190	135½	190°	500	189	675	190°	989
200	158	200°	568	200	726	200°	978



April 3rd 1894

Experiments were made in small mixer with 2.75 lbs of ore each, with juice of varying proportions, from 100 Rosin & 50 Petroleum, to 100 Rosin 75 Petroleum.

The idea was to reduce the number of balls in the finished mixed stuff, by having a mush thin enough to spread easily, and thick enough to have a maximum of stickiness.

The best results were obtained with a juice consisting of 100 Rosin, 57½ Lime, to 100 Rosin 62½ Lime; between these limits, good results can be obtained in practice.

In mixing, the following order was observed. The mixer was ½ the length of full size mixer, so that it was run through 2 times the number of runs, making 8 runs, instead of 4.

First Run.

1/3 lbs, all juice mixed up outside of mixer, and poured in slowly.

2nd run
1/3 ore extra, and both run in together,

3rd run,
remaining 1/3 ore, run in along with the other two blends.

Remaining runs ~~on~~ concentrated of total ore.

The balls gradually diminished in number, until at the 6th run, practically none remain. It is quite pasty after the 8th run, and will break but after baking breaks about abt 6% of water during an immersion of 15 hours.

Juice made of Rain 100, Luna 12.

The small mixer mentioned ~~had~~ has 25 spreaders, each with a working surface of 5" wide x 8" long it rotates at 19 revs. per minute.

The blades have an angle of 2½" in 4" = an angle of 32½°

The torque of this mixer with 225 lbs ore in it, spread along the length is,

	starting torque	Running torque
with 10 lb springs in spreaders	55 lbs	50 lbs.
empty	9 lbs	7½ lbs
with 10 lb springs with 225 lbs ore in mixer	55½ lbs	54½ lbs.
with 20 lb springs ~~empty~~ - with 175 lbs ore in machine -	47½ lbs	45 lbs.

Pulley has a radius of 12", Gears are 5 - 1

End of spreaders is 8" from centre of shaft

Experiments were made with Rosin 100, Head Oil 62, in small mixer.

It mixes all right, no balls on 4th run, non subsequent runs, but it does not get very sticky. It is not as good as Rosin & Lime for bricking.

It absorbs 0.43% water in 15 hours.
Sp.g. Head Oil 1.02

Experiments were made with Rosin & Wood tar Oil. It was found that the best results are obtained by 100 Rosin, ~~100~~ 200 Wood tar Oil

Brick made by hand, in screw press, also mixed by hand.

It absorbs 4.27% water in 14 hours.

Experiments were made with Rosin & Wood Tar. It was necessary to use 100 Rosin, 250 Wood tar, 12 cts. per ton ore.

Mixed in small mixer balls all removed at 6th run.

The mixture is to wet after mixing, & cannot be bricked, cracks like water bricks.

Experiment made with 12 cts worth of 100 ~~Rosin~~ Scotch Pitch, 200 Wood tar, the pitch & tar were so heated & mixed at a low temperature, to not lose any volatile substances from the tar.

Mixed in small mixer. No balls at 6th run, after mixed, it cracks when bricked in screw press, it evidently contains too much water.

A mixture of 100 Scotch Pitch, 150 Wood tar mixed by hand, to stiff, bricked & baked, absorbs 4.3% of water in 15 hours.

Experiment with Scotch Pitch & Wood tar Oil.

100 Scotch pitch } 12½ cts worth per ton
250 Wood tar Oil. } re.

Mixed by hand – heated in a corn pan, after baking at 530°F for 1 hour, did not break at a fall of 6 feet on asphalt, did break at a fall of 10 feet on asphalt.

Absorbed 2.13% water in 14 hours.

May 1st 1894

Wood Tar contains so much water, that it cannot be used for bricking purposes.

Heated some with $ZnCl_2$, the $ZnCl_2$ seemed to be absorbed by the tar, it all disappeared & after cooling, no separation of watery substance occurred.

Heated some with $CaCl_2$, the $CaCl_2$ worked the same as the $ZnCl_2$.

Heated some with powdered burnt lime. The massive saponified by the lime, and if enough lime is used, the whole mass is combined, if a less quantity is used, it can be separated while hot with a sieve but the filtrate is worthless for bricking purposes.

Sulphuric acid acts on it, producing a watery, sticky substance, it produces a product like sludge acid, but it still absorbs water.

Sp. G. of Wood Tar is 1.14,

Some wood tar evaporated to 2/3 its weight, to reduce water.
It was then mixed with 10% of Wood Oil using 12½ cts. per tar, brick made in mortar.
It is hard to mix, will ball up in mixer, did not crack like water brick when bricked, baked at 540° F for 1 hour.
It did not break at a 6 foot fall on wood floor, did break at a 6 foot fall on asphalt floor.
Placed in water for 14 3/4 hrs, having absorbed 5.88%

Experiment in making Lime + Resin price with steam.

Steam at 65 lbs pressure gave a temperature of 285°F in coil. Resin placed in pan + coil in resin, the resin melted and became very thin inside the coil, but owing to the radiation it did not get so hot at the edges of the pan.
Resin melts at 275°F.
Steam at or above 65 lbs pressure, with suitable apparatus, will do the work.

May 3rd

Experiments with screw feed for pumping juice into niagara.

Juice consisting of 100 Ream 62 Lumacras ~~not~~ used, It was necessary to run screw at 380 revs. per min.

The screw had a pitch of 3½" length 50".

juice was pumped about 46' diameter of screw 3" with a working fit in a rough iron pipe.

Temp	Speed	Wt. per min.	Temp.	Speed	Wt. per min.
240°F	380	1lb 13 ozs	159°	378	34 lbs
250°F		1lb 8 ozs	155°	378	38¾ lbs
238°F		1lb 12 ozs	152°	379	39¾
230°F		2lbs 5 ozs	148°	382	42
220°F		3lbs 8 ozs	145°	379	44
216°F		4lbs 2 ozs	142°	380	46
210°F		5lbs 8 ozs	139°	378	45
207°F	380	7¼ lbs	136°	381	46
198°		10 lbs	133°	381	46
1750		11⅞ lbs	130°	375	44
170°		13¾	127°	380	4 lbs 11 ozs
186°		15 lbs	90°	380	40 lbs
182°	380	18½ lbs	127	306	36
180°		19½		205	22½
175°	368	19		153	15½
171°	375	23 lbs 3 ozs		121	9½
166°	375	28½		90	3 lbs 12 ozs
163°	380	32	90°	75	2 lbs

Experiments with screw feed using screw with 1" pitch, in place of screw with 3½" pitch –

Juice used same as before Ream 100, Lumac 62

Temp.	Speed	Wt. per min.
178°	352	6 lbs 3 ozs
170°	355	6 " 3 "
168°	350	6 " 5 "
166°	351	6 " 8 "
165°	352	6 " 8 "
160°	350	6 " 10 "
158°	351	7 " 3 "
154°	352	7 " 5 "
150°	354	7 " 8 "
148°	360	7 " 14 "
142°	355	7 " 13 "
139°	347	7 " 12 "
136°	352	8 " 2 "
134°	355	7 " 10
132°	356	7 " 10
130°	361	7 " 8 "
127°	361	8 " 13 "
125°	345	8 " 2 "

As the temperature fell below 125°F the agitation of the screw disintegrated the mass of juice. It forms a foam like suspende. It can be used between temp of 150°F to 130°F.

May 10th 1894

The following experiments were made in breaking, with Asphalt Oil + Beech Wood Creosote.

Asphalt oil will dissolve Rosin, Wood Tar Pitch, Scotch Pitch (except the lamp black).

Beech wood creosote will dissolve Rosin, Wood Tar Pitch, Scotch Pitch, Concentrated Wood tar, (Boiled down to 2/3 its weight).

Bricks were mixed by hand in mortar and made in screw press end of lever 3 feet from center, with one man on lever baked at 500 27 for 1 hour.

H 1

Rosin 100 Asphalt Oil 62, mixes easy, is not sticky. 12½ cts with wood.
broke on a 3 foot fall on asphalt floor,
Immersed in water 16 hours absorbed 1.5%

H 2

100 Wood Tar Pitch, 75 asphalt Oil, 12½ cts. hard to mix, not sticky. broke on a 3 foot fall on asphalt floor, immersed in H_2O 16 hours, absorbed 5%

#3

100 scotch Pitch, 125 Asphalt Oil 12½ cts.
mixed easily, not sticky
Will not brick.

#4

Concentrated Wood tar 90, Asphalt Oil 10
mixed hard, is sticky, bricked well.
12½ cts unthread.
broke at a 4 foot fall on asphalt floor.
Immersed in water 16 hours, absorbed
9%

#5

Concentrated Wood tar, 80 Beech wood Creosote
20, - 12½ cts unth
Mixed hard, not very sticky
broke on a 3 foot fall on asphalt floor.
Immersed in water 16 hours, absorbed
6.9%

May 15th

Experiments to determine water absorption of Various Rosin & Lime mixtures.

#1

Rosin 100 Lime 50, 12½ cts.
Immersed in H_2O 16 hours,
gained 3.15% water

#2

Rosin 100 Lime 52½, 12½ cts
Immersed in H_2O 16 hours
gained, 3.87%

#3

Rosin 100 Lime 55, 12½ cts,
Immersed in H_2O 16 hours,
gained 5.49%

#4

Rosin 100 Lime 57½ - 12½ cts.
Immersed in H_2O 16 hours,
gained 1.25%

#5

Rosin 100 Lime 60 12½ cts
Immersed in H_2O 16 hours
gained 2.35%

#6

Rosin 100 Lime 62½ 12½ cts.
Immersed in H_2O 16 hours
gained 1.36%

Aug 9th 1895

Muck in Muck house,

Rosin 100
Petroleum 45

Rosin 700 lbs
Oil 320 lbs

Rosin is to be melted first, then Oil run in.
This proportion is used in hot weather, In winter it will be necessary to use more oil.

Standard muck consists of

Rosin 100
Petroleum 50
In winter it may be necessary to use Rosin 100
Oil 57½ this reduces th

number of "balls", caused by cold weather.

The following is a scale of lbs of standard muck at different prices,

10 cts,	22.5 lbs	muck per ton ore
11 "	24.75 "	" " " "
12 "	27.00 "	" " " "
13 "	27.25 "	" " " "
14 "	31.50 "	" " " "
15 "	33.75 "	" " " "
16 "	36.00 "	" " " "
17 "	38.25 "	" " " "
18 "	40.50 "	" " " "
19 "	42.75 "	" " " "
20 "	45.00 "	" " " "

Mixers are to receive 400 lbs concentrates per minute, and muck lift sprocket to run at 1 2/3 revs per minute to give 45 lbs hot muck per 2240 lbs ore, = 20 cts, = 8 lbs muck, 400 lbs ore

Bricks are to be baked at between 475° F, to 500° F for one hour, if baked at a lower temperature they may soften again on heating, if baked at a higher temperature they may oxidize, and become brittle on cooling

Bricks should not absorb more than 1.5 % water in 24 hours, if standard muck is used.

[ITEM FOUND IN BOOK]

Cable Address "Edison, New York"

From the Laboratory
of
Thomas A. Edison
Orange, N.J. May 12th 1904

Send this to Walcott to copy in log book
A.O.

Mr. Edison

The following experiments were made in bricks.

#1 – 100 Rosin	200 Wood Tar Oil,	12½ ozs,	absorbed	4.27%	water.
2 – 100 Scotch Pitch	250 "	" 12½ "	"	2.13%	"
3 – 100 Rosin	62 Asphalt Oil	12½ "	"	1.5%	"
4 – 100 Wood Tar Pitch	75 Asphalt Oil	12½ "	"	5.0%	
5 – 100 Scotch Pitch	125 Asphalt Oil,	12½ "	will not	brick.	
6 – 90 Concentrated Wood Tar	10 " "	12½ "	absorbed	9.0%	
7 – 80 " " "	20 Beech Wood Creosote,	12½ ozs	"	6.92%	

They were each mixed in mortar bricked in screw press, bar 3' from center, one man on bar. baked at 530°F for 1 hour.

#1 – Broke at 5 foot fall on asphalt floor. mixes easy, bricks well
2 – " " 10 " " " " " " hard " "
3 – " " 3 " " " " " easy, not sticky.
4 – " " 3 " " " " " hard " "
5 – no good
6 – Broke at 4 " " " " " hard, is pasty, bricks well
7 – " " 3 " " " " " " not very sticky

Joseph W. Harris.

Plant Operations Notebook, N-94-06-20

This notebook covers the periods June-July 1894 and December 1897, with some undated pages near the middle of the book. It was used by an unidentified author primarily as a receiving book for shipments arriving at Ogden. The book also contains records from bricking and rosin experiments. The pages are unnumbered. Approximately 180 pages have been used. Four loose pages have been inserted into the book. Only the bricking and rosin material has been filmed.

569 ✓ 8. Sept 4/84

✓ 8 5 C.

2 doz. Hornitering Sockets

H.

I. a.

Briquette put-in top of screen plate, plate resting on top of stove, with top open for free ventilation

				Per 30 minutes
Started.	1. 25 P.M.			
	1 26	—	200°	
	1 27	—	265° =	65°
	1 28	—	295° =	30°
	1 29	—	310° =	15°
	1 30	—	320° =	10°
	1 31	—	330° =	10°
	1 32	—	340° =	10°
	1 33	—	350° =	10°
	1 34	—	360° =	10°
	1 35	—	367° =	7°
	1 36	—	370° =	3°
	1 37	—	375° =	5°
	1 38	—	383° =	8°
	1 40	—	400° =	8½
	1 41	—	405° =	5°
	1 43	—	410° =	5°
	1 46	—	420° =	3⅓
	1 48	—	430° =	5°
	1 50	—	440° =	5°
Stop	1 52	—	450° =	5
Taken out	2 15			

No. 2. a

Same as #1. a

Started.	3 P. m.			
	3.02	200°	=	25°
	3.03	225°	=	25°
	3.04	250°	=	20°
	3.05	270°	=	20°
	3.06	290°	=	20°
	3.07	305°	=	15°
	3.08	315°	=	10°
	3.09	325°	=	10°
	3.10	335°	=	10°
	3.11	345°	=	10°
	3.12	360°	=	7½°
	3.13	370°	=	7½°
	3.15	380°	=	5°
	3.16	385°	=	5°
	3.17	390°	=	5°
	3.18	395°	=	5°
	3.19	400°	=	5°
	3.20	405°	=	5°
	3.21	410°	=	5°
	3.22	415°	=	5°
	3.23	420°	=	5°
	3.24	425°	=	5°
	3.25	430°	=	5°
	3.28	435°	=	5
Stop	3.31	438°		
Called out	3.50.			

No 3 a

Same as #1

Started, 4.50 P.M., per. minutes

4.02	—	200°		
4.03	—	220°	=	20°
4.04	—	240°	=	20°
4.05	—	260°	=	20°
4.06	—	278°	=	18°
4.07	—	290°	=	18°
4.08	—	305°	=	15°
4.09	—	315°	=	10°
4.10	—	320°	=	10°
4.12	—	340°	=	7½°
4.14	—	355°	=	7½°
4.16	—	370°	=	7½°
4.18	—	380°	=	5°
4.19	—	385°	=	5°
4.20	—	390°	=	5°
4.21	—	395°	=	5°
4.22	—	400°	=	5°
4.23	—	405°	=	5°
4.24	—	410	=	5°
4.26	—	420	=	5°
4.27	—	425	=	5°
4.28	—	430°	=	5°
4.29	—	435°	=	5°
4.30	—	440°	=	5°
4.31	—	445	=	5°
Stopped Stallion out		4.50		

No 49

Same as #1.

Started	3:00 P.M.			per minute
	3:02	200°		
	3:03	220	=	20°
	3:04	240	=	20°
	3:05	260	=	20°
	3:06	275	=	15°
	3:07	290	=	15°
	3:08	305	=	15°
	3:09	320	=	15°
	3:10	332	=	12°
	3:11	345	=	13°
	3:13	370	=	12½°
	3:14	380	=	10°
	3:15	390	=	10°
	3:16	400	=	10°
	3:17	405	=	5°
	3:18	410	=	5°
	3:19	415	=	5°
	3:20	420	=	5°
	3:21	425	=	5°
	3:22	430	=	5°
	3:23	435	=	5°
	3:24	440	=	5°
	3:25	445	=	5°
Stop	3:26			
Taken out	3:30			

No. 1. B.

Briquettes resting on top of tin plate with flap open for free ventilation

Started	8.08 am				
	8.09		200°		
	10	—	220°	=	20°
	11	—	240°	=	20°
	12	—	260°	=	20°
	13	—	275°	=	15°
	15	—	300°	=	12½°
	16	—	310°	=	10°
	17	—	320°	=	10°
	18	—	330°	=	10°
	20	—	340°	=	7½°
	22	—	360°	=	7½°
	27	—	390°	=	6°
	30	—	400°	=	5°
	31	—	410	=	5°
	32	—	415°	=	5°
	33	—	420	=	5°
	34	—	425	=	5°
	35	—	430	=	5°
	36	—	435	=	5°
	37	—	440°	=	5°
Stop	40		450	=	3½°
Taken out 8.58					

No 2 B.

Same as # 1

Started	9.08	a. 777.	per Barometer	
	9.10	—	190°	
	9.11	—	210° =	20°
	9.12	—	230° =	20°
	9.13	—	247 =	17°
	9.14	—	265 =	18°
	9.15	—	280° =	15°
	9.16	—	294 =	14°
	9.17	—	305° =	11°
	9.18	—	315° =	10°
	9.19	—	322° =	7°
	9.20	—	330 =	8°
	9.21	—	337 =	7°
	9.22	—	343° =	6°
	9.23	—	350 =	7°
	9.24	—	358 =	8°
	9.25	—	366 =	8°
9.37 — 420 = 5°	9.26	—	375 =	9°
9.38 — 430 = 5°	9.27	—	382 =	7°
9.39 — 435 = 5°	9.28	=	388 =	6°
9.40 — 440 = 5°	9.29	=	395 =	7°
9.41 — 445 = 5°	9.30	=	400 =	5°
Fallen out.	9.31	—	405° =	5°
9.43.	9.32	—	410 =	5°
	9.33	—	414 =	4
	9.34	—	418 =	4
	9.35	—	422 =	4
	9.36	—		

No. 3 B

Same as # 2.

Started at 10.11

10.12 — 200° per minute

10.13 — 225° = 25°

10.14 — 245° = 20°

10.15 — 260° = 15°

10.16 — 270° = 10°

No 4 B

Started at 10.50.

10.52	—	190	per minute
10.53		208	= 18°
10.54		220	= 12°
10.55	—	230	= 10°
10.56	—	240	= 10°
10.57	—	250	= 10°
10.58	—	260	= 10°
11.00	—	270	= 7½
11.01	—	280	= 10°
11.02		290	= 10°
11.03		300	= 10°
11.04		315	= 10°
11.05		325	= 10°
11.06		335	= 10°
11.07		342	= 7°
11.08		350	= 8°
11.09	—	358	= 8°
11.10	—	369	= 7°
11.11	—	372	= 7°
11.12	—	378	= 6°
11.13	—	385	= 7°
11.14	—	390	= 5°
11.15	—	395	= 5°
11.16	—	400	= 5°
11.17	—	404	= 4°
11.18	—	409	= 5°
11.19	—	415	= 6°
11.20	—	420	= 5°
11.21	—	425	= 5°
11.22	—	430	= 5°
11.23	—	435	= 5°
11.24		440	= 5°
11.25		445	= 5°

Stop
Cutter out

No 1 c

Briquette, put in can with 4 holes in bottom 5/8 x 1/4, with top open for free ventilation

Started 1.30 P. 977 per minute

1.33	200		
1.34	215	=	15°
1.35	230	=	15°
1.36	245	=	15°
1.37	260	=	15°
1.38	275	=	15°
1.39	288	=	13°
2.00	300		12°
1	312		12°
2	325		13°
3	335		10°
4	345		10°
5	355		10°
6	365		10°
7	372	=	7°
8	380	=	8°
9	387	=	7°
10	395	=	8°
11	401	=	6°
12	408	=	7°
13	415	=	7°
14	422	=	7°
15	427	=	5°
16	432	=	5°
17	438	=	6°
18	443	=	5°

№ 27 Same as № 26 of Chain No 2

Chain No. 5 to 6 in 1 min under 3 min

9-15	in chain	18
9-25	242	17
9-35	259	15
9-40	308	
9-45	338	7
9-50	350	8
9-55	370	8
9-55	394	4 1/2
9-50	414	4
9-55	431	3 1/2
10-00	448	3 1/2

10-55

39
31
39
117
12.9

28 Shoot No. 6

3 shots in middle
outside " " check
14-00 on stove

11-26	207°		13°
11-27	220		14°
28	245	28	10 3/5
11-34	301	33	7
39	335		4
44	355		2 1/5
49	365		4
12-02	420		3
07	434		1
12	439		1/2
17	441		

446°

12-21 55 minutes

#29 Eclipse No. 3

1-58 in altitude

1-58	200 alt	
1-59	227°	
2	238	16°
2-5	298	12°
-10	331	6 3/5
15	353	4 2/5
20	365	3 3/5
25	376	2 1/5
35	405	2 9/10
40	416	2 1/5
45	428	2 2/5
50	445	3 2/5
52	450	

Aug. 2-53

#30 Ephram No 4
3-35 In drum
Concentrate on bottom
cook some on top

3-49	208°	9°
53	243	7 1/2
55	258	6 2/5
4-5	290	4 3/5
4-5	313	2 2/3
4-29	389	

4-44 410°

Friday Dec 3 1897

2-30 P.M

Tests of Rosin & Oil

with viscometer

Plates stood several days in air

10 Rosin ~~Fell~~ Wt at 18"

4 1/2 oil Fell in 30 seconds

~~Sp in~~ (5) 18" 5/16 inch

Plate

10 Rosin Wt at 18"

5 oil 10 seconds

18
6
108

(108) 18" 18/8

Plate

10 Rosin Wt at 18"

3 oil 1/16 in one minute

(1/2) 18"

What 18"

46 oz Room
16 oz oil

Reaction three times 6 1.50" by Wed. Melting

11/16 in 31 seconds

11 18" 11/8 = 1 minute

20 oz Room
8 oz oil

9 oz Room

18/8 in 5 seconds

18
12
36
18
216

216 18"

20 oz Room
8 oz oil

One hour at 1850°

9" Wt

18 in 10 seconds

132 9" ~~[illegible]~~ 18"

132
33
396
396
4356

22
13
264

70 g Rosin Wt at 9"
8 g oil
11/8 in 10 seconds
(68) 9"

70 Rosin Oil hour 175°
8 g oil Wt. at 9"
14/8 in 20 sec

14
3
42

(42) 9"

wt at 18" 22/8 in 5 sec

(264) 18" 22/8 in 3 sec

20 g Rosin 3 Hours 175
g oil wt at 18"
13/8 in 10 seconds

(78) 18" [illegible]

20 oz Resin
8 oz oil
(16) 9"

3 hours 175°
wt at 9"
8/8 in 30 seconds

---

20 oz Resin
8 oz oil
(24) 18"

1 hour 225°
wt at 18"
8/8 in 20 sec.

---

20 oz Resin
8 oz oil
(12) 18"

1 hour 275°
wt at 18"

---

20 oz Resin
8 oz oil
(2) 18"

1 hour 325°
wt at 18" 3/8
wt at 24"
(2) 24"

44	[illegible]	[illegible]
51	[illegible]	[illegible]
55		90
69		192

228	56
284	108
72	14
96	28
120	20
18	6
96	22
1014	258

1014 | 3.9
775
2260

Dec 4 1897

25 min in down
20 g min 3 hour ~~178~~
8 g mil ~~Temp~~ Temp 50°

(38) 8"

32 min down
12
64
32
384

20 g min in pump Temp 50°
8 g mil

18 min down
6
108

(108) 9"

20 g min 3 hour 178°
8 g mil Temp 50°

14 m 20
4 m 20
~~8~~
9 m 30
15 m 30
45
3
285

(48) 10½

(28) 9"

20 oz Rosin Thermo 175°
8 oz oil Temp 50

(90) 18"

17 in 100
15
15
15
90

20 oz Resin Thermo 44°
8 oz oil

(228) 9"

19 in 5
12
38
19
228

(55) 9"

17 in 20
16 in 20
165
55
925

warmed on stove 65 Thermo 55°

(84) 9"

14 in 10
14 in 10
6
84

at 18" its quick to measure

Warmed in ~~stove~~ water bath

20 g Rum Temp 55°
8 g oil

(15) 9"

~~17~~
~~16~~
15
6
90

20 g Rum 3 hours 175°
8 g oil Temp 44°
14 in 1 minute

(14) 9"

(72) 18" 12 in 10 sec
6
72

20 g Rum One hour at 135°
8 g oil Temp 52°

(180) 9" 15 in 5 sec
12
30
15
180

Dec 7 (240) 9" 3 sec morning
2-13 70° 1-50 afternoon

~~18~~
180

9"
10 8
12 6
180 on hand warm
141 rising from table
240
240 after 36 hours at 70°

14
16
50
52
52
57
70

2 oz Brain
5 oz oil
3 hours 175°
Temp 64°
12 in 10 sec
75 g''
12½
6
75

2 oz Brain
5 oz oil
1 hour 325°
Temp 51
2
18''

2 oz Brain
8 oz oil
0
1 hour 135°
Temp 42°
12 in 10
6
72
72 g''
2.30
Temp 46°

108 g''
18
6
108
17 in 10
18
19

1 P.M.
Temp 56°
20 in 10
22
21

126 g''
21
6
126

20 oz Rosin 1 hour 325°
8 oz oil Temp 70°
(16) 1 gll 16 in 1 minute

---

20 oz Rosin 1 hour 135°
8 oz oil Temp 52°
~~18 in 16 sec~~
23 in 1/2 sec
24

235
6
1410 1-35 P.M. (141) 9 ll

---

20 oz Rosin 1 hour 325°
8 oz oil Temp 80°
(66) 18 ll 12 in 10 sec
11
11
10

3 minutes for counter-weight to fall

---

20 oz Rosin 1 hour 135°
1-5 P.M. 8 oz oil Temp 57
(240) 9 ll 20 in 5
21 in 5

1st tearing of resin broke 1-25
1-10
1-55

31 hours 175°

	at 18"	at 9"
44°	72	14
50	96	28
54	120	30
61		75
74°	Dec 7	?
70°	Dec 7	168
72°	Dec 8	84
74"	Dec 9	172

Dec 7 1897
5 14

2 - 22

2½ 18" at 9"

51°	2	
69	16	
70	18	6
73°		11½
80°	66	
88	96	22

18) 350 (19
18
170

20 oz Rosin 3 hour 175°
8 oz oil Temp. 540

(30) 9"

10 in 20
10 - 20

9 in 5
10
~~14 in 5~~

2-12 P.M. (120) 18

12 seconds in rim
Thread broke in 6 minutes 30 sec

2-22 13 seconds in rim
Thread broke in 10 minutes

20 oz Rosin 1 hour 325
8 oz oil Temp 88°

(22) 9"

11 in 30 sec

16 in 10 sec
6
96

(96) 18"

Dec 7
7-47-30 70° (6) 9" Rising 2' 25"
7-47-30 7 (21) 18" 3' 0

Dec 6 1897 Panama on Cunningham Lumber 36 hours
5-40 AM
20 oz Resin 1 hour 125°
8 oz oil Temp 69°
8h - 30 sec
7 - 30
8
255
78
333

15
18"

200 oz Resin
8 oz oil Temp 69°
16 16 in 5 sec
12 18
32
6
192

192 oz"

200 oz Resin
8 oz oil 1 hour 135°
Temp ~~69~~ 70°
26 - 5 sec

210 oz"

2 a.m. Room 8 hours 175°
Temp 69°
12 in room

3

1725
1725
1897

20 gallons
5 [illegible] oil = 190 cc
1 oz oil = 34½ cc

Plain melted h 300°
cooled h 280°
it poured in quantities cooled to
280° then put on stove
for few minutes ½ dissolve
rain on outside

5½ x 30 oz
6

3-15 PM Dec 6 (12) 56° 9"

(54) 56° 18"

8-35 AM Dec 7 (5) 53° 9"

45 cc more
over ½ minute

8-41 (44) 53° 18"

Dec 8 (66) 73° 9"

2076

No 2 Dec 6 1897

Dec 8 (120) 9"
73°

XX 3 dec 6 1917

10 on drum

6 1/2 on oil 225°

Room heated to 260°

oil cooled to 225°

3-30 dec 6 (82) 9"

56

(262) 9"

56

1 second run

3 minutes

10-17 dec 7

10-22

(43) 9"

12-15

17-5

10 seconds running 540°

5 minutes treating

(216) 12"

54°

(228)

30°

(197)

73°

9"

#4 Dec 6 1897

20 g Rosin
7 g oil = 292 cc
mixed at 255°

(85) g 56° 3 sec rising
5' 10" breaking

1-4 sec (578) g 56° 5 sec rising 18-10
2' 36" breaking

#5 Dec 6 1897

20 g Rosin
7 1/2 g oil = 259
mixed at 255°

4-15 PM (144) g 56° 2' 3 sec rising
1-10 sec breaking
1-50 sec

11-37 AM Dec 7 (158) g 56° 3 sec rising 14-5
11-45 3 minutes breaking
1-5 sec
1-5 sec
1-20

17
12
204

346
6
2760

344
1728

#5 Dec 6. 1897
20 oz Rosin
8 oz oil = 276 cc. 17
4-22 58 (204) 9" broke 40 seconds

#7 Dec 7 1897
20 oz Rosin
15 oz oil = 172 cc

Nov 6 Dec 7 1917

20 oz Cream
8 oz oil

1 hour 325°

Wt Unfinished 2 lbs 15 oz
when opened oil
at 270° about 15 minutes
after wt 2 lbs 14½ oz

15-55 280°
5th 370° after 2 lbs
13½ oz

5534 – 6 Set screw ordered 6/13

5535 – ~~[illegible]~~ (1150 lbs) 6/13

5549 – 56 bars 1" Sq. Key stock – 6/14

5570 – 1000 Chain nuts 1 x 1/16 x 3/16
1000 – 1/16 x 7/16 x 3/16 } – 6/19

~~5[illegible] doz. White [illegible] Lapping pencil~~ } 6/19
2 – ~~#[illegible] Lead [illegible]~~ ~~6/19~~
1 – ~~[illegible] S. S. Point drills~~

5[illegible] 1 Bar 1 3/8 finished Key Steel
1 – 1 5/8 – – –
1 – 1 5/8 – – – } – 6/20

5[illegible] 2 doz. #4 – 38 sheet mach. tacks – 6/20

5570 3 gal. #1 Brown Japan

5[illegible] ~~1 Drill Pot~~ ~~6/20~~

5556 ~~200 gr. #15 Rd. Head Chain~~ ~~6/20~~

5558 50 – 1/2 x 4 mach. bolts
50 – 1/2 x 3 – –
50 – 1/2 x 2 – –
100 – 3/8 x 2 1/2 – –
50 – 3/8 x 3 – – } 6/25

5[illegible] 100 Set 3/8 Square [illegible] 6/25

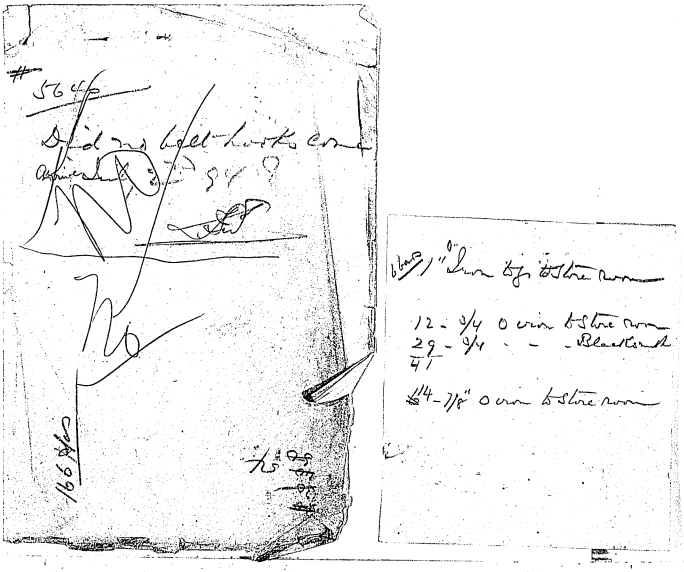
5600
~~1 doz. [illegible]~~
~~1/2 – 4" –~~ } [illegible] 6/25
~~1/2 – 1 Sunshine Tee~~

20 oz Rosin

	53	73"	
or bal	9"	18"	9"
5 oz		51	
5 1/2	14 6		66
6	20		120
6 1/2	28 48		197
7	90 78		
7 1/2	36 168		
8	204		

5 1/2 6 6 1/2 7 7 1/2 8

[ITEM FOUND IN BOOK]



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225 75
17 267 5
2 227 5
3377 25

3/4 - 3/4

8 Skips from Shaw Boiler Works. #5215
1484-5-6-7-8+1495 6 Finishers (Sessions) #5268
1477-8-9-60-5-7-2-3-4 6 Finishers (In Co. In. & B.C.) #5269
1392-3-4 6 Screen (Sessions #5271)
1392-2-4 - - In Co. In. & B.C. #5271
50 ft. hard rubber tubing 1/2" dia. x 13/64 bore. Inquire. #5278

1467-8. Finished from Danville #5318 6 Brakes on tanks
Gardner governor #5319 6 Inter Rig -
50' chain pronge trough - Machine Shop. #5320
Angle Stirrups #5326
1 35/16 Sole plate from Mr. Murray to Interstate Tunnel #5329
62 #5506 - In Co. In. & B.C. 6 Brakes on tanks #5331

1 Split pulley 108" x 36" x 5 7/8"
1 - 108 x 36 x 6 7/8" } 3 Hyd. rolls #5334
2 - 78 x 18 x 6 7/8" } at Tunnel
650/1509 from Co. In. & B.C. - 1544 50 mechanical #5338

426 - Fillister head screws 3/4" x 3 3/4"
1500 - 3/4" x 4" bolts
105 - 3/4" x 4" -
775 - Shim 3/4" x 3/8" } Mr. Formica #5342
16 Spiral Springs 2 1/2" x 3/2
12 - - 2 1/4 x 5/8" } from Miller & Van Wagoner #5343
1 Spun Gear 42.20 P.D. 1 1/2 P. 58 teeth 7/8 face 4 3/8 bore } Austin
- 12.02 - 1 1/2 15 teeth 7/8 - 2 3/8 - Interstate Tunnel #5344

Mechanic Co. 7/1506 - 9/1 3 Gears
2.00 - 1 1/2 P. 1 1/2 face 7/16
Spun Gear Mr. Co. 1 1/2 P. 1 1/2 face 7/16

1 Shaft 22 1/2" x 3 3/8"
1 - 1.092" x 4 5/16 - mates
1 Keyway 3/8" -

Sub Inc. 3/4
1/16

[ITEM FOUND IN BOOK]

500 C.S. Screws 3/8" x 1 1/2"
500 Bolts 3/16 x 1 3/4"
150 - 5/8 x 1 1/4"
500 Lockwashers 1/2 Inch

} Furnished from Convoy #5346

30 Boiler tubes 3" x 12'0"
1 3" Diaphram tube by Rawlins

} Travel. #5346

38 pcs Channel 5" x 12' x 1/4
2 - 5 x 9' x 1/4
2 - 5 x 6' x 1/4
38 - 6" I beam 3/8 x 3 3/100 x 12'0"
2 - - - 3/8 x 3 3/100 x 17'0"
4 - - - 3/8 x 3 3/100 x 8'0"

} Furnished from Convoy #5346

[ITEM FOUND IN BOOK]

Pinned to page
July 20, 1894

5646. 100 July Bell-bottoms
100 [illegible]
100. [illegible]

5647 - 3 Salt paint-brushes

~~5648. 6 lbs. 1 x 1/2 Solder~~

~~5649. 100 Bell Cast-iron Bells~~

5682. 2 doz. #571 Cedar Lead Pencils

~~5683. 2 doz. Red Tending Stretchers~~

~~5709. 5 Rasps 20 Nine Inch~~

5710. 2 lbs. Mercury

5713. 2 gross 10" Lack Saw blades

5714. 1 set 1" 8 head Mach Screws
1 - 1/2 12 - — —
1 - 3/4 16 - — —

100 - 3/16 x 1/2 brass Mach Screws

5715 - 1 doz. glass jars
6 doz. Canton flannel
2 doz. Copper Quick plates 7 doz. labels
3 - Rubber p/ses. Opal-bulb tubes
2 - [illegible]
1 gal. Paraffine oil

5716 - 100 lbs. Hy Helmets
200 gal. Hy Medium

5717 Common white flint

[ITEM FOUND IN BOOK]

5/18. Wash bowl, & butcher knife
Scrub cloth
7 Glasses

5/19 - 15 bars 5/8 Oven
20 - 3/4 - -
20 - 7/8 - -

~~5/20 - 100 yds 9x12 Window Glass 66 panes~~

Plant Operations Notebook, N-95-00-00.1

This undated notebook was used by an unidentified author, possibly in 1900; however, it may have been used as early as 1895. The book is primarily a record of observations concerning maintenance and repairs needed at the Ogden plant. The pages are unnumbered. Only 13 pages have been used.

Miscellaneous

18 tubes leaking in #12 boiler caused by low water = Brakeshoes wanted on #2 Tro steam hoist supply car. needs general overhauling = Paper needs rep. in Bejell & Eng. room dust gets in = Brake stuff broken on skip car #31 = Cleaners hoist box made for crusher like wrecking box = Skip on car #50 needs to have holes drilled in it to let water out = Lock should be put on boiler house at oil tank. Bolts in spliers on eye beams supporting crane should be tightened. Leak in 3 HP R air receiver = Take up main drive belt to town driving rope driving to Tonopah. Water pipe leaking near rawhide room. water comes up out of the ground. Drip pipe from machine shop engine should be changed = One journal cover wanted on skip car #76. = Oil leaking out of angle gen. bearing in Crusher Plant. Laying is loose on #1 Dynamo in #1 Ch. room. New curves wanted on center line shaft driving 18-28 Conv. Extra Car should be got ready under breaker machine = Two new stations of belt wanted on ceiling conv. Take in steam pipe near 4 x 5 Con. in pump house. Union leaking on oil pipe along side of building near top of shaft

Continued

Two men leaking on pipes along level gen shaft during miners = Five men lost water tank run over at power house. Take up rope drive to Crusher = Hub broken off in clutch driving #7 belt magnets = Mr Stanard be finished sun. Miners. Hoking wants oil drain at Crusher dug and no leaks can be seen = Take up main drive belt on A & E Eng. Bad spot on leather belt driving # 197 Dynamo = Oil leaking out of one rivet hole & hand hole on tank at Muck House = Coal car door leaking to fire valve = Water on heater pipes #1 Mill Cinder bottom pitch road in pump in oil house will need repaired to night = Mr Scott wanted in valve on steam pipe in oil house steam valve seat needs grinding in main pipe on #1 Boiler = Water column on #12 Boiler to be fixed. Low Water Alarm be taken out between boiler & column = Piece of rubber belting lying between track and track south of store rooms. Main drive field in miner building needs taking up = Dry Mud valve in A & E Eng. = Repair seat broken on friction clutch for mud Co = Friction driving miners hoist this morning caused by not oiling properly [illegible]

Continued

Belt spoot on lime line conv. belt. Oil drain pipes leaking at head end of lime line conv. Oil feed pipe leaking in about a dozen places at head of lime line conv. Oil feed & drain pipes leaking on angle shaft in C.P. Guard stand. Belt just over sprocket wheel at briquette dump dangerous. One barrel of pitch at muck house going to waste. New belt wanted on tightener belt driving center mill elev. Steam needs packing on steam valve on pitch tank over furnace. Drip pipe leaking on oil cylinder on pump in oil house. Two dozen grease cups off each 3½" & ½" wanted for #1 Mill. Bolt new ¾" Manilla rope on drive at Breaker. Hawsers wire rope that is on drive on rope drop. Rope wanted on second line light in #1 Mill. One stud wanted in #7 belt magnetic. Usual amount of oil bot today. Lantern not lighted at fire valve. New rawhides wanted on center mill line shaft. Oil drain pipes leaking on counter shaft bearings next to sprocket wheel driving shaker. Leak in air pipes going to Iron this have not been rep. 14 mercury cooling on main shaft in Boiler house off bot night.

Continued

Lagging on west end pulley of shaft driving shaker needs rep. Mercury cooks left open on blower line shaft bot night. Belt on #7 magnum hard to the east. Main drive belt from jackshaft to C.P. needs tightening. Exhaust pipe needs better supporting on A.T.S. Eng. Belts need taping up on Crusher & Rolls in Screen Room. Rolls need to be turned up in screen Room. Water barrel busted in northeast end of #1 Mill. New rawhides wanted on A.T.S. Eng. J.D. bearings. New brake beam wanted on #41 skip car. Hot blower elbow on #1 Furnace rep. to night. The bracket that bearing of shaker drive on pinion shaft fastens to is not rigid. bolts must be loose. New long guy wanted on drive pulley on counter shaft driving shaker. Rope drive to breaker stand is taken up. Lost motion in eccentric straps & bolts loose in frame on #9 tow. Oil pipes & rawhides leaking on big 40" Jack Shaft. Eccentric straps very loose on toggling at Coal dump. Nipple with tire coupling on #4 Lightout needs to be turned up. Drip tank for #1 Mill needs to be cleaned out around it so it can be examined. Oil pipes leaking on shaft in main shop.

Continued

Mercury cracks all open on blowers in #1 Mill last night = Ladder broken leading to blower line shaft north side = Valves leaking on oil tank near #15 Conv = Brass cap wanted on end light N & H & Roll = Oil cup left open at bind of h. line conv = Bracket that pinion shaft is fastened to driving shaker is loose = Oil leaking very bad out of west end bearing of roll mill line shaft = Oil boat by stem jarring out of valve on pipe oiling angle shaft in C.P. = #33 & 44 ship needs repairs = Repairs & 5 needs dust to be cleaned from it = Canvas needs rep on east end bearing of priest shaft in mixer room = Plate in front of screens over 14 M & H R in bad shape holes worn in 8" long = Every switch west of passing room needs rep. rails out of line = Nav'd worn bad on bottom drums of belt mag = Please have seven plates put in overflow chute from cooling placers = Brake rod wanted on ship conv & H = Kettle wanted to warm residuum oil when filling ale wheels = Pipe drier to breaker needs taking up =

Continued

Bolts wanted in hopper from 14 to 20 Sc Rolls = Hole in blower pipe #9 Loos = oil leaking out of steam chest #9 = Bolts need to be gone over & tightened up from ladder #9 Loos = Nearly all drain pipes leaking under S & H R = Oil leaking out of nine unions & ells on pipes oiling S & H R wobbler bearings = Union leaking on main pipe oiling S & H R second floor fittings & ells leaking on pipe oiling east mill line shaft = New canvas wanted on one bearing on center mill line shaft = Guide loose on piston rod in pump in oil house = Stop cock on discharge pipe on pump in oil house leaks = Fan is not connected up in mixer room = Drip pipes under S & H R are plugged up = West side belt on A & T Eng wants looking after = Please have partition between C.P. & #1 C.E. house rep where broken by belt also shed over drive belt = New rawhides on counter shaft driving shaker = Bolts washers & other iron should be removed from C.P. that are not in use = Platform railings around Eng & pulley on S & H R. j.p. needs rep.

Continued

Drive belt from J.D. to #1 Counter shaft worn & tightening belt screw loose in shear wheel on angle shaft. Motion in Hand Engine needs rep.
Missing cocks left opens on Big McJ.D. Cap screw loose in field on #16 Dynamo. Missing cock. Screw on R.H. Engs. Cap screws loose in bracket on pumps at pumping station. Nuts loose on one rod at pumping station. A bolt wanted in mortise gear on main drive. Hangers need to be tightened. Wedges in mortise gears north end of broken line shaft need tightening. Two pulleys loose in counter shaft driving to shaving. Wood lagging is loose on main drive to broken bottom of #1 tower. Oil drain pipe leaking on bevel gear shaft. New cam lifts wanted on main line shaft. Oil pipe line over webbler 3 H.R. is broken need bracing. Bolt loose that secures field to Dynamo in #1 C.E. Hand make one cam catcher & put on bright for #1 oven. Stone chutes repaired in yard cobed up from blower drive belt worn loose. Tackles not burning at fire valve.

Continued

Belts loose in coupling on A.T.S. J.D. Lagging is loose on top drum #2 belt. Mag. & Union leaking on west end of blower line shaft. Grease should be wiped off of French rug belts. Oil drain pipe leaking on center mill line shaft. Oil pipe leaking near H. Roll. Mechanics working on 3 H.R. were delayed 60 man by no one being in storeroom. Stronger levers wanted in rotain tanks. Lagging very loose on some pulleys on bin line conv. Coupling loose shifter on north line shaft Mill #1 W end front #4 E.W. Oil drain from pipe union leaking bad on pinion shaft bearing next to ratchet wheel on #3 E.W. Lagging on belt tightener on drive belt from angle shaft to #6 Cam shaft needs rep. Number that belt tightener is on at drive belt from angle shaft to #6 Center counter. Bolt small air pipe bursted between air receiver & #1 Mill. Ladders should be put at Briquette dumps. Funnel with screen wanted at #1 Mill to fill medium oil cans. One flange joint needs rep. on steam pipe in C.

Continued

Bell on announciator in C.P. does not ring. bell is exposed to dust. The first 14 M & H&R. when the new wobbler was put on by Keys. was not leveled up right the end of the shaft was raised up so high that it made the wobbler bind. Bonds need rep over ditch West of C.P. 45° Elbow leaking on oil pipe over N. Shaft. tank at shaft where tide. Oil leaking out of west end bearing of south mill line shaft. Oil feed pipe leaking on west end bearing of south mill line shaft. Union leaking on oil pipe near drain tank in #1 Mill. Oil leaking out of west end bearing on south mill line shaft. Pipe leaking that oils west end bearing on south mill line shaft. Oil leaking out of valve stem on main pipe oiling shutter mill line shaft. Oil lost from supply tank S.H&R valve left open on drain pipe. Drip pans should be made to catch oil from bevel gear casing on S.H&R counter shaft. Covers on drip pans on elevator should be changed.

Continued

Oil is getting on Big M^c drawbolts oil comes from eng. bearings. Oil running out of four bearings on floor in French Eng Room. Rawhide weight feed of boiler need rep of Big Mc Jack shaft. Oil drain pan is running over that catches oil from bevel gears on south mill line shaft. Oil cup empty on fan blowing air in Big Mc Eng room. New hose cover off of revolving tank allowing rain water to get in. Pits flooded in round house by water valve being left open. Boiler feed pump need rep at broken plant. New gate bars wanted in #1 boiler. Rain water runs in #1 Mill comes from between Mill & French eng. house. Rain water runs in #1 Mill from north side. Freight cars strike two posts supporting sand house. Freight cars strike one post supporting the line car. Coal cars strike posts supporting steam pipe at Coal dumps. One nut loose on piston rod on pump at pumping station. Old plates taken off of rolls should be removed from C.P. Valves should be put on oil pipes from tank to pumps in case of joint leaking no means of shutting off oil.

Continued

Plunger union leaking on oil
pipe on oil pump in oil house =
Oil pipe in Little Mt. Engine room
leaks in several places = discovery
cocks leaking on east end bearing of center
mill shaft, oil leaking east of bearing
must be single gears in C.P. = Dashing =
& suction pipes on oil pumps at
Andrews tank will have to be changed
not properly connected = Men in oil
house must be careful to close valves on glass
gauges on oil tanks = Mill room must
be careful to close valves on bearings when leaving
at night = 4 barrels of muck taken out
of #3 oil tank = 1 barrel of muck taken
out #1 oil tank = 12" belt from angle shaft
to #5 Crusher to be taken up = Hole
worn of dust house at C.P. Roof
over 506 boiler house needs rep. =
Roof leaking over Big Mt. Engine
Posts should be put in south wall
main drive pulley hanging = Suggest
to have solenoid pipe changed that
warned to clean oil cup in house
for this pipe makes it dangerous
for men working around C.P. Plant

Continued

Suggest valve be put on level gear
casing on C.H.&P. countershaft so oil
could be drawn from same = Bolt
wanted in switch lever west of
assay room = Have hook in skip
chain block made fast so skip can't
turn around when being hoisted on
#1 Crane have it pinned so it can
be taken out any time = Suggest
strips of wood be made fast on ladder
in front of two main drive pulleys
on #1 C.P. I.P. very dangerous as it is
at present = Boards over ditch
east of #1 C.P. House need rep. =
Men that took old bolts out of #3 Crusher
buckets left them lying on the floor
Have chain put in door in C.P. East
of "X" Rolls to prevent any one getting
hit by cars = Valve leaking in #1
fire plug = Considerable oil lost
by elbow bursting at oil tank =
Men that attends oil tanks became
confused this morning and allowed
oil tank in #1 C.P. room to overflow =
Have chute in #1 stock put in =
lined with sheet iron =

Continued

Tools which off 7-13 + 20½ Co
of round power in excellent condition
lights should be placed as under
bill of #29½ Co should be seen.
Main drive belt with mill shaft
needs taking up & valve on water pipe
at round house is leaking

Plant Operations Notebook, N-95-00-00.2

This undated notebook was used by Edison and an unidentified author, possibly in 1900; however, it may have been used as early as 1895. The book is primarily a record of observations concerning maintenance and repairs needed at the Ogden plant. The headings of individual pages are in Edison's hand. The book contains 105 numbered pages, followed by one unnumbered page with an entry on the #9 Elevator. At the beginning of the book is an index to all but the last entry.

Blank pages not filmed: 96-97.

[illegible]
[illegible]
[illegible]

#3 [illegible]

Hole worn in chute discharging into Modern chute against stack danger of fire. Finish fans at tops & put on lighter belt. Put new babbitt shells in post hangers worst side bearing on counter shaft driving fan at tops. Old drain pipes & rawhides leaking on counter shaft driving fans at tops #3 dryer. Oil leaking very bad out of fuel & drain pipes on counter shaft driving fans at tops #3 dryer.

Fans from [illegible]

Patch on No 5 fan water jacket leaking several oil pipes leaking = Several bad oil leaks = Rawhides leaking on all fans = Fans needs to tightened on shaft #7 broken oven oil leaking out of #8 broken oven fan hanger same #9 = Engine driving fans need rep = One bearing needs canvassing on counter shaft driving fans.

Broker Machines

Frame No 1 Brokers = One set of 3rd plungers
wanted for 3rd & 4th, one set Lapper breaking
wanted " " " = One set second plungers
" " " " = Main oil pipe breaking
bad near No 30 = Oil pipe leaking on bevel
gear bearings, on north line shaft driving
Brickmaker wheel leaking out of 2d bearing
from bevel gear driving north line brocker
machine line shaft = Main oil pipe leaking
that feeds brocker machine line shaft = One
bearing needs oil washing on sprocket wheel
line shaft under brocker machines =
Oil leaking out of several bearings on
sprocket wheel line shaft under brick mch.
Belts need to be gone over & tightened on
line shaft hangers under brocker mch.
Conveyor needs tops on pinion shaft bearing
next to pulley driving sprocket wheel line shaft
under brocker machines = Set screws out
of pulley on west end of main shaft
over Brocker Mch.

No 1 Jackshaft

Dynamos on Crushing plant

No 1 Countershaft

Driving pulley is loose on shaft
Oil drain pipe leaking on west end
bearing. Bit screws loose in main drive
pulley. Engine needs rep & to be tightened
on tightener pulley on belt driving #1 Counter Shaft
Bolts need to be tightened in wood Engine
on tightener pulley on belt driving #1 Cdlg
Mercury works left open last night.
New canvas wanted.

Corliss Engine No 1

Railing should be repaired around
fly wheel - dangerous - New canvas splice
wanted on west main drive belt - West
main drive belt is wearing on woods.
Nar partition rep. that was broken by belt.
Steam gauge in #1 Corliss Eng room needs rep.
Oil waste should be removed from oil tank
in #1 & 5 rooms.

Muck House

Two steam pipes leaking over muck kettle = steam pipe leaking over muck kettle = Drip pipe under 3 H.P.R. is plugged up so it let oil back up on bearings 5 & 6 + run out in belt = oil leaking out of valve stem near tank in Muck House = Lock should be put on house over oil drain tank in #1 Mill = oil leaking out of rivet hole on tank at Muck House = oil leaking out of valve stem near tank at MH.

Cordier Packshaft = No 2 packshaft

Drive belt from #1 C.E. J.L. to #1 Counter needs to be taken up = Have belt from #1 C.E. J.L. to #3 Counter shaft taken up = set screws loose in pulley to driving giant roll = Mercury cock + main valve left open last night on J.L. in #1 C.E. Dynamo room = Union leaking on oil pipe of #1 C.E. J.L. = New canvas wanted on line shaft bearing in #1 C.E. dynamo room = set screws loose in pulley on #1 C.E. J.L. that drives giant roll = New rawhide wanted #C.E. J.L. New belt wanted on drive from #1 C.E. J.L. to #1 Counter = Belt from #1 C.E. J.L. to #1 counter shaft need taking up = Four pulleys on #1 C.E. J.L. are loose on shaft =

No 2 Countershaft

New canvas wanted on bearings.

Intermediate Roll

Several new plates wanted = New lagging wanted on drive pulley to Int Roll & Counter Shaft = Shutters wants to be replaced over Int. Roll Belt = New guard wanted over belt = Painter wanted on adjusting bolt on north Int. roll friction band = Some plates wore very smooth. Should have some new ones = 5 Bolts loose on north roll = Countersunk bolts loose in hopper = ~~Hook~~ drive belt = north roll bearing runs hot west side = 4 bolts very loose on south roll = 7 bolts loose on north roll = 8 bolts loose in south + 8 bolts loose in north roll = Washers wanted for bolts in plates = One hole in new plate on south roll needs to be chipped out = All casing leaking inside = Stone get bitter in roll = Housing + wear grooves in arbor = Put on two new plates = Drive pulley on north roll pounds = Bolts loose in hopper = One hook nearly pulled out in drive belt = Levers used to turn roll need sharpening = 2 bolts loose in each roll = Oil leaking out of union on drain pipe on south roll thrust bearing = Bolts need to be one over = One plate is worn bad = 4 bolts loose on south + 3 bolts loose on north roll = Inside oil casings leaking = One plate is not down on corners

Giant Roll -

Belt driving roller feed needs to be taken up. 7 bolts loose on north & bolts loose on south. Union leaking on pipe oiling E.P. = Iron broke on Cradle of dump = Screw needs taking up = New canvas splice wanted on belt driving roller feed = Bolt out of plate on roller feed = No bolts loose = Two new plates wanted soon = Washers wanted for bolts in plates. Oil leaking out of north roll oil coming west side inside = Oil leaking out of south roll oil coming east side inside = Top adjusting bolt through west housings is loose. Please have floor rep. on dump floors. Have iron plate put on dump to keep stones from going down back of roll = Several leaks in pipes oiling wobbler bearings. Levers used to turn roll need sharpening = One bolt loose in north #10 bolts loose in south roll = Jam nuts wanted on set screws in drive pulley = Oil leaking out of valve stem on pipe oiling east end bearing of south roll. Union leaking on south roll thrust bearing = Bolts need to be gone over. = Oil rail board broken on steps leading to roll. = 1 bolt loose on north + 2 bolts loose on south roll. = Belt needs taking up. Lagging on pulley drive is badly worn = Oil leaking out of thrust bearing on north + south giant rolls. =

Giant Roll continued

Oil leaking out of north roll oil casing wood side=

Giant Roller feed

Apply belt shaved be put on= Drive Belt nuts to be taken up= Plates are bent= Bolts loose= Bolts wanted in= they loose in friction lever. Iron plates repaired tonight= Put smaller pulley on countershaft drive. to reduce speed one half= Driver pulley is broken= Iron drive pulley lagged. Needs to be taken up= Iron rep. cannot turn sticks on wood around same= Belt nuts tightening= Clutch needs lagging= Drive needs to be taken up= out of order catches on wood work= will stop. Pinion key wanted in bevel gear drive

Roller feed under Intermediate foot

1 Elevator

Hoist Roller feed Continued
Tap bolts out of sheet iron end. Neck rep.
Have plates fastened down to night. Make
provision for new worm & gears. Bolts need
to gone over at ball on on #1 Flex. Rear worm
were very bad. & bolts loose.

Crane No. 1
Found one wire broken in hoist rope.
Have oil barrel cut in middle & bolt put
on as to oil chain & rope on #1 & 2 Cranes.
Armature on hoist needs rep. Carriage brake
needs rep. grip blocks need planing off. Brush
holders need to be lined with contact strips.
New wood wanted on friction bands.

Crane No 2
Flaw in hook. skip chain. Links in hoist
chain are worn. #2 Chain is very dry.
Rivets are loose in back end hoist motor.
Chain needs to be annealed.

Craneway —
Have wood filling piece put between iron on east side. Crane track out 1½" causes armatures to burn out.

No 3 Jackshaft

Elevator #1 Continued

One belt driving roller feed is wearing on bale of tightener = Bolts loose in top west side = One oil cup off west side = Blank clamps are loose = Bolts loose in pinion bearing west side = Set screw loose in gear wheel need to hoist gate at bottom = Wires broken in rope = Bottom drum too high = Three plates broken on retarding roll at bottom = Several int. clamps have slipped on east side = Blank clamps are loose = Bum hard to the east at top = One sleeve broken on west side = One sleeve broken on west side = One clamp loose west side = Blank clamps are loose = Oil leaking out of pinion shaft bearing next to pulley drive = Belt tightener on drive needs new lag going = Raw hides leaking on roller feed = Valve stem needs packing at top #1 Elev tank = Oil pipe broken on sprocket chain on the shaft bearing driving roller feed at bottom #1 Elev = One oil cup off = Pinion leaking on oil pipe at top =

Elevator No 1

Belt driving needs to be taken up. New shoes should be put on friction clutch tonight = One short sleeve broken on east west side = Drip pans should be put up on west side = Bottom drum is too high = Oil hose on west side bottom drum bearing is bad so oil cannot pass through. One rubber hose leaking on right feed #1 Elev roller feed = Bolts loose in guard over retarding roll at bottom = Same in angle iron = Bolts loose = One belt wanted in clamp on guard over retarding roll at bottom One bucket clamp very loose on west side = One short sleeve broken on west side = Oil drain pipes seem to be stopped up on gear & pinion bearing, oil leaks out very bad = Two sleeves broken on west side = Bolts loose in pinion bearing east side = Sleeves wanted = Plates worn smooth on retarding roll at bottom does not take hold of corn Oil pipes in west side are loose at top = One sleeve broken on west side New plate wanted in delivery = One sleeve broken on west side = Fibre = working out of one clamp on west side = Large hole worn in plate from #1 roller feed = Bolts loose in angle iron over retarding roll at bottom = Bolts loose in clamp on sprocket chain guard over retarding roll at bottom =

Elev.t 1 continued

Bolts loose in plate over retaining roll at bottom
Chute in rails should be gone over & tightened
clamps wear on frame where they bolt on boxes
Bolts loose in pinion bearing east side =
Wooden chute wanted under roller feed = One
bucket clamp loose on west side = Several chain
rope clamps have slipped on east side =
Bottom drum set too high = New friction shoes wanted
Bolts loose in clamp guard & axle iron for
retarding roll bottom = East pinion shaft 2½" = Elevator
leaking on pipe oiling top drum bearing west side =
Arms bad to the east at top = Canvas need repairing =
Have timbers put in to hold iron of liner for 1st Elev. chute
to make same rigid = There should be a rail around
platform of pinion shaft = Oil leaking out of pinion shaft
bearing next to drive pulley = Top drum bearing runs
hot west side = Two wires broken = Blank clamps have
slipped & are loose = Clamps need to be straightened =
One sleeve broken on west side = Ground wires
broken in rope = Hoist ropes rep. to throw out gate &
clutch roller feed = 1" space between roller feed &
hopper stones get in wear ends of roller feed =
One bar bent on gate on roller feed = Shovel caught
by rock getting between bucket & bottom plate in delivery
from roller feed = One sleeve broken on west side
Blank clamps are loose = Bolts loose in frame near
safety catch = Plug in end of pipe in new bucket
need to be fixed

1st 36 Roll –

Canvas needs repairing on Idler
pulley bearing. drive belt
Plate should be repaired in
roll hopper = One check plate loose &
broken in 1st 36" Roll hopper = Sheet iron
in 1st Roll Hopper is wearing on roll.
Plate in hopper needs repairing = One hinge
broken on door over south = Bolts loose in
frame work supporting delivery into chute be
gone over & tightened = Belt tightener pulley
wearing on frame drive belt = 7 Bolts loose
in north & 12 bolts loose in south. Bearings need
to be raised on Idler to take up drive belt =
One new check plate wanted = Two new plates &
dry bolt wanted in delivery into = See on oil
drain pipe leaking very bad east side = New
check plate wanted = Union leaking on pipe
oiling west side = Bolts loose in angle iron
outside hopper = Dry bolt wanted in hopper =
Hop plates worned = 6 bolts loose in north & 1 bolt
loose in north roll = Plates worned = New hoppy
wanted on tightener pulley drive belt = Clamp
plate every other one. Drip pan back of 1st 36"
east of 1st Elev. should be cleaned out so it will
catch oil = Wood & iron plate out of hopper under
Plate is worn under & bits large stones between
plate & roll = Roll 1st Roll hopper tightener

1st 36 Roll

One bolt loose & one bolt wanted in west side roll hopper = Drive belt needs to be taken up = Need setting together = Bolts in plates that were tightened last night were not properly locked = Bolts wanted in sieve plates in hopper = Make provision for new channel iron over south roll = Plates should be screwed Two bolts loose in north roll coupling = Covers needs rep. on east end bearing south roll. Timber should be cut out so as to clear drive belt = Oil leaking very bad north roll casing east side = Have Idler pulley raised to right to take up slack in driving belt = Chute under rolls needs general overhauling = Oil leaking out north roll oil casing east side out side top two Bolts need to be gone over = Have hopper under rolls lined with sheet iron hopper worn through = Plate is loose in hopper under roll = Two bolt broken in plate south roll = One bolt broken in south roll = Covers wants rep. on idler bearing = New check plates wanted = New piece of sheet iron wanted on side of hopper under = New check plate wanted = 2 bolts loose in north, 2 bolts worn in south roll = Have splice on roll drive rep to right = Belt tightener on drive is wearing on frame = Door over north roll needs rep = One bolt broken

2nd 36 Roll —

Several rivets wanted in chute delivering in. Bolt loose in split collar south roll wobbler. Upon looking on oil drain pipe from west end bearing roller feed = One cap screw out of cap on thrust bearing south roll = 7 Bolts loose in north roll = Oil drain pipe leaking from south roll west side out side = Very bad leak back of 2nd 36 Roll. Carpenters work = New plate wanted on retarding roll = Set screw loose in sprocket wheel roller feed = Small sprocket shaft driving roller feed has worked loose = Have wood in hopper rep. front comes out = Heavier chain wanted to lock up door over south roll = Two rivets wanted in hopper = Two bolts wanted in brace supporting hopper. Union leaking on oil drain pipe from west end bearing south roll gear shaft. Worm in hopper = New guard wanted on Roller feed = Fire bolt out of hopper = Lower shaft to clear out of tightener pulley drive belt = Drain pipe stopped up south roll west side out side = Chute delivering in leaks = Chute delivering in leak bad = Measuring cock left open = Chute delivering in need rep = Set over retarding roll nuts hard on rolls = Handle wanted on door over north roll = Bolts need to be gone over = Want closing in =

2d 36 Roll.

Have hopper under rolls lined with sheet iron hopper are worn through = Sprocket wheel on roller feed is loose on key & shaft New wood hopper wanted = New logging wanted on belt tightener drive = Chute delivering in leads bad = Shaft extension that drives roller feed is loose = Oil plates wearing hard on roller feed if retarding roll they should be cut off = Have hopper braced tonight it comes down on roller feed = Oil wanted in gear casing = 2 bolts loose in north roll = Oil drain pipes leaking west side = Oil leaking out of gear casing = dropping down on 2d" roll drive belt =

24" Roll =

Oil last today. Bearing flooded unnecessarily = Shaved flames caused by broken bolt heads from 1st 36 south roll Union leaking very bad on oil drain pipe under west side = Oil leaking out of bearing on north + south = Union leaking on oil drain pipe back of 1st R. = New rubber hose wanted on drip pipe = Have new tooth put in mortise wheel. = New wood + canvas wanted on gear casing = 4 bolts loose in north + 16 bolts loose in south roll = Oil should be cleaned up under gear casings = Belt tightener pulley put on drive belt should be cleaned out = Oil drain pipes leaking on west side = Oil leaking out of gear pulley bearings = New logging needed on belt tightener drive = Log gone on belt tightener = 1 bolt loose in north roll. 17 bolts loose in south roll = Union leaking on pipe oiling wobbler bearings = New canvas needed on north roll wobbler bearing = Pulley broken on belt tightener = Bearing on belt tightener want new canvas = Wants cleaning in = Oil leaking out of west end gear + pulley + shaft bearing = Sheet iron work bad in hopper under roll = Have 24" roll belt hooked tonight = Fire pail wanted = New check plates wanted = Plates wore bad =

24 Roll. Continued

Drip pans should be put under west side bearings to catch oil. Plates on north roll are worn smooth & bolts loose in north shaft. Loose in north rolls. Oil leaks out of north wobbler bearings. Iron drive gears should be examined. Cambs wanted on shaft. Hole worn in chute from 1½ Conv. Chute from 1½ Conv needs rep. Chute from 1½ Conv is too long & chokes up repair to night. Hole worn in chute from 1½ Conv.

Conveyor No 1

Elevator No 2

Mortiss gears should be examined
and tightened
Plaster have two new ropes spliced
for drive
Bottom drum is too high
Canvas wanted on bottom drum
bearing east side
One dog needs repairing. Thread
twice cabred by running engine backward
Oil leaking out of gear bearing on west side
One bucket clamp slipped on east side. Thread
twice cabred by running engine backwards.
Bolts wanted in bottom plate in delivery.
Oil leaking very bad out of top drum
bearing east side. Thread wore on shaft
in rope tightener sheave wheel on drum rope
New plate wanted in delivery from. Rawhide
leading bad at top. New canvas wanted on
top drum bearing east side. Wood work bolts
rop tightener on drive needs up tonight. Canvas
wanted on pinion shaft bearing east side
Board should be put at top to prevent any
one slipping in. Oil pipe leaking on pinion
bearing on west side. Oil pipe running to sh
to 1½ Cons should be braced. Oil leaking out of bea
in cons at top. New belt wanted from dug to shaft 6.

Elev #2 continued.

countershaft back of #1 Dryer driving Elev #2 = Oil leaking out of gauge valves on tank = One clamp very loose on west side = Guards wanted at top = Set screws are loose in driven sheave wheel on drive = Canvas wanted on pinion shaft bearing = Platform around top worn too wide by pipe fitters should be up. Too much thrust motion in ratchet wheel shaft. Nut off bottom hopper = Two oil cups off east side = 7 broken wires in rope = Union leaking near tank at top = Hole worn in bottom plate in delivery from = Bottom drum too high = Manway door left open last night at head #3 conv. on line shaft driving #2 Elev = Oil pipe running down #2 Elev to 1½ Conv should be braced = Oil dropping off of canvas on #2 Elev dogs = Drip pans at top need to be emptied = Oil from pinion bearing draining on gear casing + drops on #2 & 4 dogs.

Dryer No 1 + Dryer furnace

Coupling leaking on oil pipe at top #1 Dryer = Tightener wanted on sprocket chain driving shaker = Retarding door needs repairing in over flow chute at top = New screen plate wanted 2nd screen from top = Top liner sheared on shaker #1 D = Bracket is loose on #1 Dryer that pinion bearing is fastened too driving shaker = Hole worn in chute from top #1 D to 1½ Con = Chute to 1½ Con needs rep = Brickwork need = repairing in furnace = Hole worn in chute at top where sandwich patch is on = Hole in chute from #1 Dryer to 1½ Con = new sandwich patches = Met flange on fan at top nearly worn through = New elbow wanted on draft pipe in front of furnace = Door tightener put on sprocket chain driving shaker = Thermometer glass wanted on #1 Dr. = Lost motion in engine used to drive fan at top #1 Dryer = Hole worn inside of hopper at top = Canvas not put back on small eng. used to drive fan at top = One oil pipe leaking on line shaft driving fan at bottom of #1 Dryer = Oil pipe leaking back of small eng. driving fan at top #1 Dr. = Hole worn in chute from #1 Dryer to 1½ Conv. = Oil leaking on oil drum pipe from burner on countershaft driving shaker in #1 Dryer = Oil pipe + rod leaking on countershaft driving shaker in #1 Dryer

Coal Conveyor –

Picking Belt Conveyor No 1 $\frac{1}{2}$

No 2 Conveyor

No 3 Countershaft =

Oil leaking out of west end bearing = Bad spot in drive belt & Main drive belt groove. Belts very loose in coupling = Oil leaking out of west end bearing = Mercury left open = East end bearing wobbles. Shaft seems to be springy

No 3 Elevator

Mortise gear should be examined & tightened
Springs on oil cups. strike rivets in frame at bottom of elev. west side
Union leaking on oil pipe near tank at top
Oil drain pipes on #3 elev. gear & pinion bearings are stopped up. Oil leaks out very bad
Wheels are dry. Several rope clamps loose on west side. Oil cups need repairing.
Something breaking springs. Springs are striking frame near bottom west side. Oil drip pan leaking & pulley driving. Bolts very loose in rope clamps. Union leaking on oil pipe near tank at top. Out hat rope clamps loose on west side. Drip pan should be put at top to catch oil from pinion bearing west side
Bottom drum is too high. New canvas on bottom drum bearing west side. Wheels dry. Union leaking on oil pipe near tank at top. Elbows leaking on pipe oiling pinion bearing east side. Elev bucket need to catch oil on east side leaks. Out hat wheel loose. One bolt loose & one bolt missing in frame at top. Union & Elbow leaking near tank at top. 7 broken wires in rope. Elbows leaking near tank at top. Bottom drum too high.

Elevator #3 Continued.

Elbow leaking on pipe near tank at top.
Union leaking on oil feed pipe near tank at top.
Drip pan should be put under pinion
shaft bearing to catch oil when ada-

No 3 Conveyor.

Big rope drum northside

Small Rope drum Southside —

Blockhouse No 1

Windows left open, several window lights wanted = Hose bursted on oil drain cans = One oil drain can from fan is running over = Large pulley on countershaft driving fan is loose on bushing = Hose bursted on one oil can oiling fans Canvas needs rep. on fan bearing = Roof needs repairing when carpenters dress up stage for the Exe Sports, need to be cleaned out.

Needs to be cleaned out under where carpenters were working = Oil drain can from fan is running over = Oil leaking out of bearing on belt on countershaft driving fans = Large pulley loose on countershaft driving fan = Dust accumulating on motor driving fan = New rubber hose wanted on cans oiling fans = New rubber hose wanted on cans feeding fan West side = Board fast in one feeder under = Belt on motor driving fan needs to be taken up = One bearing on fan not getting any oil = Drip pan is running over that catches oil from countershaft that drives fan in N.E. = Two rubber hose bursted on drain cans in south end = One fan bearing not getting any oil =

Power House

No 2 Corliss Engine.

Jackshaft No 2 Carlos

Air Compressor large

Air compressor small =

Porter Engine
Pounds = Valve needs packing on lubricator

Dynamos Power House

Idler pulley with flange wanted on drive belt. Oil hose heated on oil drain can - Oil drain can running over. Idler put on belt driving #135 dynamo turns too hard.

Climax Boilers —

Stack at Bricker Plant needs painting = Rigging wanted on Same to paint = Roof needs repairing at Bricker Pl. = Air holes closed over fire door at Bricker. = Examined #9 2 pails of scale in good condition = Steam leaking out of main valve stem on #10 - One 2½" globe valve leaking out of stem at bricker = One tube leaking in #9

Mill 1 =

French Engine

French Engine Jackshaft in Eng Room

West main drive on French engine will need to be taken up soon. Elbow leaking on oil drain pipe on bearing next to west drive pulley. Elbow leaking on oil drain pipe

Main Shaft in Mill -

Wire rope driving south mill line shaft seems to have been spliced to tight shaft springs. Lagging wanted on tightener pulley on belt driving north. Lagging loose on main drive pulley north. Two holes leaking on south mill line shaft.

Raw Exhaust French Eng House

B&W Boilers

8 short tubes leaking on #1 - 2 short tubes leaking #2. Soot should be cleaned out of 2-3 & 4. Kerosene lubricator needs rep. Examined #4 scale in steam drum 1/16" thick. Bricks need rep. in upper combustion chamber. Tubes need cleaning. Mud drum not open. Windows need rep. in B&W Boiler room. 4 tubes leaking on #1.

3 High Roll Jackshaft

Oil Drainpipe leaking next to No 50 M Roll.

Railing wanted on each side of 36" belt.

445 Cenozoic -

Mine pump —

McDeymour Engine —

Motor driving fan for Big Mc engine room needs to be leveled. Bad spot in main drive belt on Mc. Also canvass splice started on drive belt to on dl. Armature on motor driving fan for Big Mc Room needs rep. Main drive belt will need to be taken up soon. Valve stem broke on Mc. Canvas hose on middle bearing Mc studs need to be tightened that hold cylinder to bed little Mc. Barrel catching drain oil from Big Mc is leaking.

Screens over 14 mesh Rolls

1st 14 Mesh Rolls.

Examined oil holes in top thrust bearing = Belt driving roller feed needs to be taken up = Collar foot in bevel gear pinion driving 1-14 M = See leaking on oil drain pipe near tail end #6 Cr = Have canvas put on rope guard = Blown twice = Bottom plate of hopper has two holes in it over top of gate = clutch heats up & heats gear casing = New plates wanted in front screen roller feed steel imbedded in = Blower to be turned off = One bolt wanted in dirt guard over south middle roll bearing = Two bolts loose in bottom hopper Found 14 wires broken in splice of rope = New rubber check pieces wanted on roller feed. Hole worn in side plate in delivery = Same in offset plate in hopper = One stay bolt loose New rubber wanted on wobbler = 2nd hopper needs to be cut so top bearing will not hit = Middle roll bearing out of line causing bearing to run very hot. Take up belt driving turning off bevel tight = New belt wanted to hold #1 hopper in place [illegible]

1st 14 M Rolls Con

each end of bolt for 3/16" cotters - Middle roll is loose on key: Hasp picked up so can be measured = *Bearing bolts wanted for wobblers on 14 M Rolls (1st & 2nd not specified) * Front plates on bottom screen roll feed over 14 M Roll are worn out. * New plate wanted in hopper at head #6 Ton to 14 M Rolls. * Show extra bolt made for new wobblers that holds buffers =

Oil feed pipes at bearings leaking out of tee.

2ND 14 mesh Rolls

Mill men have trouble throwing in clutch. Nut wanted on bolt in bottom sheave wheel guard north side = Bracket not in proper place on bottom hopper = Screws loose in middle roll oil casing south side out side check piece not on right roller feed north side = Bolts loose in top dust guard south side = Two bolts loose in rock = Bolt loose in hopper #2 = Ropes are worn bad. Have hoppers put back to their proper place. North bottom bearing runs hot = New check block wanted #1 hopper roller loose on wobbler shaft = New canvas wanted on clutch = New gate wanted in #1 hopper = Middle bearing runs hot south side. Dust guard loose on seam = Examine oil pipes on middle bearing south side = Middle roll south bearing runs hot sheet iron is loose on dust casings. Hole worn in check plate in delivery = Drip pipes loose = Have sheet iron put in hopper under roll = Wood loose on oil casing roller feed = Middle bearing on north side runs hot = Oil leaking bad out of conveyor bearing under roll = Oil leaking from oil casing on top middle & bottom roll north side = Middle roll has groove on north end 3/8" deep = Bolt loose in rock north side = New wire rope wanted soon =

3d 14 mesh Rolls Continued

4 stay bolts loose = New canvas wanted on roller feed bearing = Oil leaking from south bearing - steel imbedded in = Middle bearing on south side roll runs hot = Gate on #1 hopper needs patching hole worn in it = Have bearing bolts put in tonight = Oil pipe leaks on on wobbler bearing = bottom bearing south side runs hot roll seems to be out of line shimming out of bearing = Have floor rep. not to roll. Oil leaking from globe valve = one stay bolt loose = Dust cap loose on middle roll bearing south side = Belt drives roller feed wants to be taken out = Mud box on oil casing roller feed gears = Thrust bearing runs hot on middle roll = Oil pipes are loose = Cotter pin wanted in bolt on wobbler = Middle roll bearing north side runs hot = Mud collar on roller feed is off = Oil pipes need rep. = Must new rope on 2d, 1st m & H.G. roll one strand pulling out = Oil bearing very bad out of gear casing over gears driving 2, 1st & M 3 H.G. Oil is leaking out of new pipe over Roll where valve is plugged = Low in union of oil pipes =

First 50 mesh Rolls -

Tee leaking on oil drain pipe from wobbler shaft. Ropes are worn bad = should be got ready to run; One large oil hose wanted = Put on wobbler = Dust cap is off middle roll north side = New rope wanted = Bolts are loose in middle roll thrust bearing steel imbedded in = Dirt guard needs rep = Dust cap loose on middle roll bearing north side = Oil pipes on north side rolls are all loose = Shells have worked out 1/4" = Oil pipes need rep = Shimming is out of south bottom bearing = Oil leaking out of wobbler bearing bar wheel loose on wobbler shaft = Drip pipes out bearing on 1st & M 3 H.G. Roll. North side = Oil hot pipe broken = Drip pipe broken on south side = Drain pipe out of south bottom bearing = Oil pipe loose in top bearing = Oil pipes loose in south middle bearing =

2nd 50 mesh Rolls —

Clutch gets warm. = Drip pipe broken on north bottom bearing = Oil casing loose on middle roll bearing south side outside = Same on bottom roll bearing = Screws loose in dust guards north & south side = Split collar loose on wobbler. Minor leaking on pipe from oil tank over = Middle roll corrugated = Ropes are worn bad = Pin on south end bottom roll = Oil pipes broke on bottom bearing = Cap wanted on middle roll thrust bearing = Dust guard on middle roll is loose & ready to drop off south side = New rubbers wanted on wobblers = New rope wanted = Drip pan is broken = Middle roll is corrugated so bad that it gets bolts loose in thrust bearing = Brass on end of top roll needs repairing cap screws are broken - needs turning off = Cap off of middle roll thrust bearing = Drip pipes loose = Dust guard off north side on bottom roll & like needs taping out 1/8" = Minor leaking near tanks = Middle roll south bearing has not take oil bearing is full of grit = One feed pail wanted back of roll 2d floor = Nail imbedded in = Pin on bottom roll south end = Same middle roll south end hard to be turned up & not ready to run = Middle roll thrust bearing should be covered to keep out dust.

2d 50 Mush Rolls

Steel embedding

4 Elevator —

Oil pipe loose in pinion bearing oil leaking out of valve stem next to T tank over 405 Elw = Nale worn in delivery at top. new plate wanted = Wheels dry = New raw hides wanted at top = Bottom drum too high = Spring is weak on one dog = Pieces of wood fastened to frame of #6 Elw at delivery from #6 Con are wearing loose. wearing on buckets = One set screw out of gear during 405 ele oil wanted in casing = One dog needs rep = Oil wanted in gear casing = Ratchet wheel loose on shaft = Arc light needs rep. at top = Semicircle worn in check plate in delivery from 6 Con to #4 Elw =

5 Elevator =

wheels dry = Wheels dry = Guards wanted at top = New rawhides wanted at top = Iron plates in delivery tops is worn out. New plate wanted = broken wires in ropes = Bottom drum to high = Union leaking on oil drain pipe from bevel gear drive shaft = Dog need rep = Drive needs to be taken up = New lagging wanted at tightener on drive =

6 Elevator —

Oil leaking out of top drum + gear bearing. Drain pipes seem to be stopped up = Two unions leaking on pipes oiling counter shaft drive = Oil drain pipe leaking from pinion shaft bearing next to drive pulley = Bolts need to be gone over in wood lagging on top drum. Spring is weak on one dog = Drain can should be put at top to catch oil = Bolts loose in pinion bearing at top west side = One drip pan under #6 Elev gear casing is leaking on drive belt = Oil leaking out of #1 Elev pinion bearing on west side =

#7 Elevator

Put one new bucket on in place of one that came off = End bearing next to sprocket driving #7 Elev wants babbitt liner between shell & cap.

Dryer No 2

Dust discharge pipe half full of dust. Belt needs replacing that drives fan at top = Rawhides leaking at top = New rawhides wanted on drive shaft = One fire pail wanted = Rawhides need rep. on fan at bottom = Bolts loose in east end bearing & brace of main drive shaft = One rawhide needs rep. on roller feed bearing at top = New rawhides wanted at top & bottom Leadweight loose on rope sheave wheel in #1 Mill driving to #2 Dryer = Channel iron at top should be put on elev = Dust discharge pipe half full = Dust on roof = Union leaking on drain pipe from east end bearing of countershaft driving fan at top = Oil runs out of roller feed bearing on inside #2 Dryer Crossing dirt to get hand if there is not attended to it will block dryer from top to bottom = Drain pipe loose in drip pan that catches oil from #2 Dry roller feed bearing Main oil pipe leaking near tank at top = Pipe leaking that feeds #1 Cr Idler bearings at top = Duplicate drive rope to #2 Dryer is getting saturated with oil = Oil flaping out of countershaft bearing next to sheave = Oil is getting on belt driving fan at top Oil comes from fan bearing = Drip

Dryer #2 Continued

pans at top should be emptied

14 Mesh Screens -

Some of distributors off. Wood bottom washed worn through. new rawhides wanted on counter shaft driving roller feed. Distributors were bad. New door wanted on #20 Banks. Set screws loose in pulley driving roller feed. Bad leak in roof.

50 Mesh Screens

3 pieces of iron wanted in hopper under 50 M. screens over 3 HR.

12" Magnets

Leaks have carpenter look up

8" Magnets

Line shaft driving roller feed broken — Oil drain pipe wanted on west end bearing of line shaft: Oil leaking out of east end bearing of counter shaft driving 8" mag line shaft. New lagging wanted on pulley on counter shaft driving line shaft: 1" iron oil drain pipes leaking from line shaft bearing: Union leaking on oil pipe west end floor: Rawhides leaking on line shaft. Thread stripped on oil pipes in several bearings on line shaft: Oil drain pipe stopped up on east end bearing of counter shaft driving line shaft: Union leaking on oil pipe floor north side: Hole worn in chute on trunk #1

Blower Floor —

One wood pulley loose on line shaft. 24" 8 ply belt wants hooks taken out. Oiling up 8" Ray floor. One wooden pulley loose on line shaft. Hose leak repd on blower floor lets dust down on cor of 4" Mag. Mercury cocks left open on blower floor line shaft last night. Union leaking on blower floor near #6 Elev.

4" Magnets -

One window needs rep on floor. = New gears new top for oil casing & stop bolts to hold cap in place wanted on roll fed drive #1 Bank. One window needs rep on floor. = New canvas wanted on roll fed clutch #8 Bank. = New water barrel wanted on floor = New rawhides wanted on line shaft. = Chutes from mill rep. very bad cracks in chute 1/8" wide = Coupling loose on line shaft = Globe valve leaking on air pipe on 4" Mag floor = Water in barrel south east corner of 4" Mag floor should be changed & Parting boards need setting on #4 & 6. = Several new sprocket wheels wanted on roller feeds.

Belt machine

Sand House

Elbow leaking on oil pipe near tank =
Coupling " " " " from " =

No 2 Stock House

Concentrates running out of door

Fire apparatus.

Piston rods need packing on water end of fire pumps. Valve in #3 fire plug is leaking = Fittings wanted to connect fire hose. Water leaking out of valve stem on fire valve under rail road track = Hose house removed from #2 fire plug. Two fire pails wanted in mixer room. One fire pail wanted in eng. room at Bricker. Fire pail wanted at Stoker. One fire pail wanted in muck house =

General

No 1 Loco

Brake shoes wanted. Nuts wanted on rear step. Head light needs rep. Hand brake needs rep. Steam gauge requires 12# string. Screen wanted in water tank. Headlight bracket broke.

No 2 Loco

New journal brasses wanted = Lost motion in cross head = one four brass wanted = Cover wanted on coal box = screen wanted in water tank = One wheel wearing on frames = Connecting rod striking brake shoe = Cab needs repe=

No 3 Loco

Rear step needs rep = Split key wanted on brake shoe = Wedge screen bent on back journals = Jam nut loose on brake rod = One cylinder cock broke = Bolts need to be tightened in front end = Front head needs painting = Front head need rep = Tubes are leaking = Check valve seat ruined, needs rep. Door wanted in side of ash pan = Reversing gear needs rep =

Yard Engine —

#9 Elevator

Bolts loose in bevel gear bearing driving #9 Elev. - Canvas torn on tail end of pulley bearing of Con delivering in #9 Elev.

Plant Operations Notebook, N-95-00-00.3

This undated notebook was used by Edison, possibly in 1900; however, it may have been used as early as 1895. The book is primarily a record of observations concerning maintenance and repairs needed at the Ogden works. The pages are unnumbered. Approximately 150 pages have been used.

See Leaks in Roof
page 118 1st book

Jack shaft Dynamo Room Crushing P.
Bolts & set screws loose = Pulley in Center of
jackshaft has bolts loose in hub.
One bolt loose in hub of pulley
driving 25 ~~f~~ Dynamo.
One Grating wants Canvassing =
Set collar loose = oil pipe needs repair
Lagging loose on Put drive pulley No 1 Countershaft E.

Dynamos Crushing plant - piping, oil

Oil pipe needs bracing on Dynamo =
Oil hose broken at drain at Dynamo

No 1 Corliss Engine - piping oiling etc
Box covering steam pipe feeding exhaust
to Eng pit is broken under Railroad
track East of Engine house -
Rusting around W Main drive belt shaft
to be repaired at once dangerous -

Jack Cushman

Lagging off belt tightener
Belt to No 3 Counter needs taking up
Canvas splice torn =
Set screws loose in pulley driving Giants
Wood lagging loose on belt tightener
pulley on belt driving Jack shaft No 1 S.S.
Set screws loose in pulley on Jack
driving No 1 Countershaft S.S. =
New lagging wanted on belt tightener on
West main drive belt =
Canvas splice broke in drive belt =

Jack shaft of No 1 Carbon belts & tightener
Set screws loose, occurred 3 times, suggests
longer screw 1/2 min. 5
Long belt driving Jack at 36 Rolls worn at joints
Guide Pen is too short =
Lagging main drive pulley east end loose,
Waste oil pipe where it comes in leaking =
Counterbalance weight on main drive loose
Lagging loose on both main drive pulleys =
Set screws in pulley driving Jack loose
belts in pulley driving Giants = Ladder needed
to oil shaft not safe = Drip pan under
pulley next to one driving Giant leaks onto belt
East main drive pulley is loose on Key = Main
drive belts needs taking up West side =
Belts test screws loose in pulley that drives
Intermediate = Belts loose on Coupling
of shaft = One set screw loose on pulley
driving Giants = Main belt to Counter 3 to
be hooked tonight = Main drive belt to 3 Counter
should be taken up 4 days off (in) 1st report =
West main drive belt on Engine needs taking
up tonight = Wood lagging needs to be
tightened on main drive pulley = 2 main
drive pulleys are loose on Key to shaft =
Canvas splice main drive belt needs repair
Engine = belt to 3 Counter needs taking up

Intermediate Roll Jack shaft.
Bolts loose on driven pulley.

Intermediate Roll Cont

4 bolts loose N roll — Union leaking
on oil pipe back of roll =
Crack in face of idler pulley Int roll drive —
Valve wheel Extension should be put on oil
Valve W side Int Rolls —
Starting bars should have ends
Sharpened — N roll leaking on needs
E side — Oil leaks out N roll
Oil Casing W side outside —
N intermediate roll pulley very dry getting
no grease — New lagging wanted on
pulley driving rolls —

Intermediate Roll.

Oil pipe oiling friction leak badly —
Bad knock, roll rubbing on side N end of pulley
2 rolls = Rivit out of lagging pulley on roll
South roll = Waste oil pipe leaking where
screws into Casing of N roll E side =
Oil pipe valve feeding west side needs changing
Waste oil pipe leaking at union new
Int roll connecting shaft = Dogs worn for turning
Rolls needs points sharpening =
Oil Casing East side leaking = also on
West side leaking = Nut loose N E Corner
of Hopper = 45° elbow leaking badly
on drain pipe of N roll inside - W side =
Thrust end bearing S roll very warm =
Ball pipe joint S roll for oiling friction is too
tight = Drip pan over S roll pulley
full oil running on belt = S roll casing
leaking on inside W side = Idler pulley
Intermediate Roll needs looking after =
Piece of steel Casting on Hopper should
be cut off = Nine bolts loose in
Hopper = 1 rivit loose & 1 out lagging
drive pulley South roll = ~~Gum~~ Dirt
gum over driving belt should be cleaned
Would suggest it be made so it could not get
on belt = N Roll 8 bolts loose plates

S roll 1 bolt loose in plates =
Door on S side hopper needs repairs
Idler pulley runs very warm —
Thrust bearing S roll runs warm —
Some bad spots in drive belt =
Heavier weight wanted on rope holding up door N roll = One bolt in hopper had thread stripped = New bearing put in N roll runs hot = Thrust bearing N roll runs hot
Taken off today = suggest it be taken off tonight examined & repair if necessary
5 bolts loose S roll 2 loose N roll
~~Screw loose in oil leaking under~~
outside S bearing — 2 Rivets out of hopper under rolls — Drive belt should be taken up tonight = Oil leaks out S roll bushing E side
6 bolts loose in N roll now in S = Raw hides need repair = Lagging in bad condition S roll pulley = W roll very warm = Driving belt on main shaft needs taking up = 3 oil leaking inside =
friction band broken N roll = Oil leaking out S roll oil leaking W side inside =
friction band broken N roll — New belt wanted = Lagging loose S roll —
Grease cup broken on N roll = Oil & water steam broken W side roll —

Grant Roll.

Set screws loose on Idler pulley of belt Driving roll
2 valves on oil pipe feeding grease leaking =
Dogs need for turning rolls needs point sharpened = Bolts in lugs securing check plates on Hopper loose = Raw hides leaking on thrust end bearing = Waste oil pipe NE side leaking = Oil leaking out of thrust bearing S side = Oil leaking out of bolt holes W side ==
Bracket supporting grease cups on N Grant roll friction is not on proper =
Union leaking East casing S grant inside =
Hole in partition 1 bolt loose in Grant Driving belt goes through shaved &c Canvased =
Piece of wood used to guide roller feed belt is wearing belt == Bolts & lag screws in Steep dump need going over
= N roll 1 bolt loose in plates = S roll st bolts loose = S roll oil leaking leaking on inside E side = Stones thrown out of rolls right in belt = 6 bolts loose S roll
= Driving belt to be hooked tonight
3 bolts in plates loose N roll 5 in S roll
Oil leaking out bearings in thrust bearing
Need extra friction bands =

Grant

Wood around hopper needs repair
Oil leaking out N roll oil Casing inside
West side — Iron broken in cradle E side
also bolt loose in other iron — New blocks
wanted around roller feed lets too much
Corner rock back of roller —
Oil getting on Roll driving belt comes from
friction pulleys — Pants need be dressed on
starting levers — Tools need be dressed that
are used to tighten bolts — plates on rolls —
~~they~~ Screw broken in lug securing check
piece on rolls E side — Screw loose in clamps
N grant roll housing E side — 2 bolts loose
N Roll 3 loose S roll — ~~Nut loose~~ ~~and~~ ~~bolts~~ Oil leaking out N roll
Oil Casing W side inside — little S roll
W side inside — Starting bars showed
leave ends sharpened —
Guard around rolls has wood slats
loose — ~~Stud~~ bolt out ~~short iron~~
end.

Grant Roll Roller feed

Electric lights need repairing — two top
bolts broken in end of roller feed — New
rubber wanted — pulley on counter
driving roller feed has shifted — Have
belt driving roller feed taken up tonight —
pulley driving roller feed has shifted on shaft —
Have extra friction shoes for clutch got ready —
New wood wanted around roller feed
worn — chunks get between roll & hopper —
Roller feed belt needs taking up tonight —
Stud ~~—~~ bolt out sheet iron in
end grant roller feed E side —
Friction clutch wants tightening

Crane No 1

Bracket securing brake needs dowel pins — Screw broken No 2 bumper — Resilience bogies should be boxed in — Have hooks moderate timing — One tooth broken in gear & frame bearings broken at bearings on crane caused by block running up against drums — one drum cracked —

Crane No 2

Recess seat needed = would suggest that a piece of sheet iron be put along rail over contact strips prevent oil getting on them = 5 =
Skip chain hook has flaw in it =
Oil hole needs changing on main drive shaft bearing N E end No 2 Crane =
Nut on skip chain block of 2 Crane needs to be made secure =
Some rivets loose that secure I beam to track on 2 Crane = Bolts on main drive shaft Coupling of 2 Crane loose = one bumper needs repairs = Skip chain has flaw in hook = Bump on south end No 2 Crane should be made lower so wheel strikes bump = Chain dry + worn $\frac{1}{16}$ = Journal makes vibration in No 2 Crane track =
Skip chain hook has flaw in it =
~~[illegible]~~ frame for Recisterm boxes should be painted =

No 1 Elev Continued
found 5 wires broken in rope = several intermediate rope clamps slipped = One sleeve broken E side =

Crameway for Electric Cranes
Bolts in fish plates of Crane track are loose ~~[illegible] I been to [illegible]~~ House gauged crane track from Center of Crusher plant to W end of track Center of Bldg Track measures 37' 10½" at End of Crotch 37' 9 3/4" = Several bolts loose in frame, bolts loose in fish plates are marked thus → with blue chalk. Framework of Crameway have several mortices with no tenons in which rain water lodges causing timber to decay = gauge of track Center of Bldg 37' 10⅞ West end 37' 9 5/8 = East end 37' 10 5/8 = several vertical bolts need washers on fish plate bolts should be tightened =

Roller feed to 1 Elev (Continued)

Corrugations nearly worn off ~~[illegible]~~ retarding roll = Capscrew ~~[illegible]~~ out of guard over Sprocket chain driving retarding roll = = Gearwheel broken = 1 bolt loose in retarding roll — Bolts loose in guard over sprocket driving retarding roll + guard is bent so it comes in contact with chain = one spring broken in clutch driving roller feed = Guard on sprocket driving retarding roll should be repaired tonight = Clutch on roller feed dont clap in place when thrown = Drive belt needs taking up = New oil hose wanted = One bolt out of guard over retarding roll — Bolt loose in guard of retarding roll roller feed W side — Rawhides leaking on pipes oiling roller feed bearings Sprocket chain broken + one bolt out of Clamp on guard over chain driving retarding roll = 5 bolts out of plate over retarding rolls = angle iron loose on plate over retarding rolls = Stones are wearing retarding roll ~~[illegible]~~

Roller feed to No 1 Elevator,

Bolts loose in roller feed + retarding roll + Union is leaking near where Valves are located that oils bearings on roller feed = Sprocket chain caught in oil Cups of Elev Wheel breaking 3 Cups + 12 springs = he says guard be put on Elev frame + guard put over chain Valve to prevent cones getting bet Chain + Idles = Oil pipe Union + rawhides leaking roller feed bearings = Rawhides leaking on pipes oiling Roller feed bearings = pieces on sides of guard over sprocket chain driving retarding roll come loose = Clutch lever bent = Canvas needs repair on drive bearing =

No 3 Quickshaft driving 192 nd 36 Roll Canvas on W end bearing took = dagging loose on pulleys driving 36 & 24" Roll Oil leaking out end bearing next rope sheave Set screws loose in driven pulley = Bracket holding lever for roller feed broken = Chain driving retarding roll wearing on guard = 5 bolts in chute over retarding roll loose 1 bolt in retarding roll has cotter out = Timbers that shaft is on need going over + tightened =

No 1 Elev Cont'd —

Elev running to E side & wearing flanges of wheels — Oil pipe broken on top —
Elev rope worn bad in some places caused by clamp running Elev with clamps loose —
Bolts in pinion shaft bearing top Elev short W side — are breaking wanted on bolt in rail at Cut out —
Sleeves on W side wearing on frame at top —
Wheels are wearing on bolts in frame at top W side — One cup off wheel W side
Top drum don't run central — Buckets are striking top drum E side —
Bottom drums too high — gasket out of oil pipe union E side pinion shaft —
Several Intermediate clamps slipped —
New bottom plate wanted soon in bottom Chute delivering into 1 Elev —
Elev buckets touching on plank at bottom Elev East side —
Bearings on head spindle shaft of 1 Elev run hot lacing — New Canvas wanted
top drum bearing W side — Several Intermediate rope clamps slipped
found 2 wires broken in rope —
2 sleeves broken on W side —
Elev runs hard to East at top —
Hammer frozen [illegible] Intermediate clamps

No 1 Elevator

Sleeves running in contact with top of frame
Wheels wearing bolt top of frame W side
Oil pipe union leaking at top Elevator close to Trunk
Bolts loose in safety catch device —
Old hose bottom of Elevator bent so oil can't go through
Countersunk wood screws top of Chute delivering into Elevator loose — ~~Bolts [illegible]~~
Bad oil leak union at bottom of Elevator — Springs on oil cups by lifting plate which splices structure —
Bolts in splices and braces of main frame loose
One bucket loose — clamps need to be gone over —
~~Buckets striking lacing on pipe ceiling~~
Union leaking on drain pipe near 1st 36 R —
Several springs wanted — 2 sleeves loose
16 sleeves wearing frame top Elevator E side — 2 Intermediate Cl amps slipped
Belt driving Elevator slips — union leaking on oil drain pipe back of 1st 36 R —
One intermediate rope clamp missing —
One " " " slipped —
15 sleeves wearing on frame — oil leaking out of pinion shaft bearing next to spider
pulley driving Elev — Canvas torn top drum
2 clamps — Nut off bolt securing wooden support of No 1 Elev pinion shaft — bolt
Worn pinion shaft bearing next to [illegible] wheel

Make provisions for new plate in chute
One sleeve broken = Chute top Elev
Few holes worn in it = 1/2 inch
Vibration in frame of Elevator Top
one bar across gate at bottom of Elev
is bent out 2 inches = 1/4 inch thrust
motion in pinion ratchet shaft = Clamps
slipped on Elev = Knuckles on pipes oiling
rolls feed bottom Elev need repairs =
Clamp slipped on 1 Elev 11 am =
Oil pipe should be braced top Elev =
Bolts loose in pinion shaft next to ratchet
wheel = Canvas wanted on gear casing
top Elev = Have clamps leveled, tighten bolts
= Oil and cup off = clamps wearing in frame
at Cut out = Bottom drum should be looked
after one inch space between rope & drum
on one side while E side drum touches
rope = 2 short sleeves broken E side =
Clamps wearing on frame near bottom of Elev
= One sleeve broken = one cup off wheel
E side = Found one wire broken in rope =
Several inch hooks clamps slipped =
Bottom room too high there is extra friction shoes got
ready for 1 Elev Clutch = Clamps should be
straightened up = 1 short sleeve broken = 2
clamps very loose. 1 sleeve broken W side = 4 bros are
[illegible] but should be clamps

1st 36 Rolls
Hinge on door over North Roll broken —
2 rivets out of door over hopper
Chute back of rolls that delivers into 1 Elev leaking
Babbitt in South Roll pulley shaft bearing
is loose = Inspector says friction too
tight, or belt tightener not enough weight on
when rolls block belt runs to one side
& wears on framework of Building =
Oil pipes feeding 1st 36 Roll bearings leaking on
West side = Oil casing North roll leaking
on East side = Some plates are faced
too deep for bolts = N roll 2 bolts loose in
plates. S roll 8 bolts loose in plates =
Drum bolt needs taking up = Oil leaking
out N roll shaft E side = Thread stripped
in bolt seaming door North roll =
Rear hubs leaking pulley bearings =
Driving belt should be taken up =
3 bolts loose N roll = 8 loose S roll —
One check plate loose = Hopper needs repair
N thrust bearing runs warm = Idler pulley bearing
in bottom driving rolls runs warm = Bolt broken
in handle of door over roll = 7 bolts loose in
plate N roll 8 in S roll = Hinge broken on door
of hopper = Chute over roll hopper need repair
[illegible] was taken away should be replaced

1st 36

Canvas needs repair north roll pulley bearing = Have need piece put in drive belt = Oil leaking out of roll casing E side = Canvas wanted on idler bearing drive belt = Main drive belt needs taking up tonight = Have drive belt taken up. Rock Edler friction bands = Oil leaking out of casing N roll E side = Stay bolts broken in chute over rolls = wanted dropped limiting stop to put on Edler tightener to prevent Edler shaking Opposite side = 4 bolts loose N roll 10 loose S roll = Drive belt should be taken up = New plates wanted = found 3 worn broken in rope 7/31 = Babbitt loose S roll pulley bearing = Oil leaking out of S roll oil casing W side inside = Roll plate wearing on sheet iron on check plates = Dust collect under rolls & wears bolt heads = lagging on tightener of Drive belt bad shape Drip pipe from bearing idler drive leaks Union leaking N roll Oil casing E side outside = 2 new plates wanted in hopper delivering to 1st 36 Rolls = Set collar loose on idler pulley shaft on belt driving rolls =

1st 36 Rolls Cont

1st 36 Rolls blocked by stones left in rolls by Reays + Burns = Check piece is off = Have Idler removed tonight = plate needs repair in hopper over rolls = Have new belt hook put in splice of drive belt = New plate wanted in chute under rolls = plate in Hopper worn through Hook wanted in door of Hopper over rolls = Oil leaking out of idler pulley bearing of ~~drum~~ = shaft coupling should be repaired tonight S Roll = Hot bearing N roll E side = Have new lagging put on Counter shaft pulley driving roll tonight =

2nd 36 Roller

Bolts loose in gear shaft bearings
Oil casing leaking = oil pipe feeding Roll leaking
at Valve over North roll E side – Oil casing
is leaking on inside of North roll East side
Canvas cover on gear bearing that drives roll
North roll – has holes in it = Hook wanted over
door over South roll west side =
Shearing bolt wrenches wanted = Chute
delivering to roll has 3 bolts out of it =
Bolts loose in chute = 2nd 36 Roller feed –
Sprocket wheel driving Roller feed is wearing
on grease cups = 2 bolts out chute
delivery into 2nd 36 = Oil leaking out of
gear casing running in 24" Roll belt =
Chute leaking = N roll 3 bolts loose
in plates. S Roll 3 Bolts loose in plates
Leaks in hopper over rolls = Chutes delivering
to rolls needs to be raised & made secure –
Holes in new plates drilled out 3/16" =
Set screw in sprocket wheel on return
roll is striking chain = Driving pulley
loose on Countershaft = Canvas on
belt tightener needs repairing =
New canvas wanted on gear bearing =
11 Bolts loose N roll 1 loose S roll =
Gear casing of rolls needs more support =

2nd 36

Brace put on gear casing is not put on right = New sprocket chain wanted on extending roll = One bolt out of hopper = 3 bolts loose in plate S roll 4 - N roll - 3 bolts out of chute delivering to rolls = Hole worn in hopper = Oil leaking out of rubber hose - 9 bolts loose N roll 4 loose S roll Chute delivering to Rolls needs repair longitt 2 bolts out brace supporting Chute delivering to 2nd 36 Rolls = Inside Oil Casing N roll stopped up so oil cant drain out of pipe = Oil leaking out of inside oil Casing N roll E side. Have gears looked over longitt and tightened = plate under rolls as worn through = Stones are wearing ends of feed roll =

24" Rolls -

Oil casing on gears leaking = 2 Tees on oil pipe that oil gear bearings leaking = Oil Casing on North roll east side leaking New wrap plates on checks plates needed = Bushings broken on South 24" Roll Westside S S - Nipple leaking in Oil pipes feeding rubber bearings Cap screw wanted in brace supporting oil pipe that oils North roll East end bearing - Bolt out of brace supporting roll hopper S E Corner - = New plates put on - one new plate with the old plates connect shaft to vibrate or shear = Oil pipe feeding roll need supporting Oil raw hides are leaking = Oil Casing North leaking = Casing on S roll leaking on E side = Oil casing removed on S roll gears to put nut on bolt in split collar that holds pinion = One section of one tooth in Mortice wheel were broken = Hinge on door over South roll broken = Union in oil drain pipe leaking = Idler pulley runs very warm = N roll Thrust bearing leaking on E side = Canvas on roll gear casing has hole in it worn by belt = N roll 7 bolts loose plate S roll 7 bolts loose in plate Rawhides leaking - Oil drain pipes thrust

Bolts loose & broken on lugs on crusher
24" roll hopper = Oil leaking out N
roll wobbler bearing = 2 Canvases on
gear casing need repairs = Braces
supporting oil pipe wobbler bearing are
loose = New cap that was put on
pinion bearing is loose = Lagging on
belt tightener needs looking after =
8 bolts loose S roll 2 loose N roll =
Door needs repair on chute delivering to rolls
pulley on pinion shaft is loose on shaft
4 bolts loose on S roll 4 on N roll = Cap broken
on pinion shaft bearing careless of new
left nut on rolls? = oil leaking out of
rubber hose = Oil leaks out of gear casing =
3 oil casings leaking inside rolls =
Oil leaking out N roll bushing W side =
piece wood worn out on hopper under
rolls = Nuts loose on stay bolts of rolls =
Have bearing put in pinion shaft where
broken = Canvas wanted on roll next wobbler
Drive pulley on pinion shaft very loose on key & shaft =
New Canvas wanted on gear casing tonight =
Teeth broken in mortise wheel by bolts from set collar
on pinion shaft getting on wheel. Bolt was put =
wheel by night was not riveted or pinned =
Have new plates put in place those badly worn =
New check plates wanted = Chute from 24 roll is worn

No One Conveyor =
Steam pipe along Conveyor needs changing =
Can't go down ladder = Belt wearing on
Cross piece that support turnups
New distributing piece wanted in
hopper delivering into No 1 Conv =
Oil bearing hot = Conveyor runs to
East side of tail pulley =

24" Roll Crusher =
7 bolts loose N roll 9 loose S roll =
New plates wanted = S roll bushing
loose on W side = plates were not put on
rolls right last night = examine teeth on
Worlton wheels tonight = New Canvas
wanted on gear bearing = Cap oil ring
be put on pinion bearing tonight if bent
is taken up = Oil leaking out S roll
oil Casing inside West =
Oil pipe on wobbler shaft leaking
New Hopper wanted under the rolls =
Hopper under rolls for ore strikes on worm housing
Oil leaking out West Bearing S roll gear casing

24" Rolls Carlum
Hole worn in Chute delivering to rolls
New check plates wanted —

Return chutes to 24 Rolls
gets blocked up —

No 2 Elev Cont

Bolts in clamps should be tightened
Have Manilla drive rope spliced =

No 2 Elevator,

Belt loose top bearing = Stay bolts in drums loose - gear casing leaking
Canvas torn off bearings next to rope sheave
Oil drip pans should be emptied =
One bucket loose = Chute top Dryer choked caused by Waste, wood, rust material
openings at the frame = Oil leaking out pinion bearing = Bolts loose in shearing plate on shaft wheel driving Elevator
Canvas needs repairing pinion bearing East side = S W rail is worn at top =
Canvas needs repair next to shaft wheel driving Elevator = Ratchet wheel loose
plate put on chute top Elev extends out too far buckets catch plate = Buckets striking chute top Elev = Bottom drum too high = Rawhide need repair top Elev =
Oil leaking out pinion bearing in gear casing
Drip pans should be emptied = bottom drum is raised too high = Mercury circles wants repair so they can be adjusted =
Oil cup off E side = Drip pans should be emptied top dryer = Hole worn in chute top Elev
3 wires broken in rope = Bolts in clamp
Very loose = bottom drum too high =
Oil cup off E side = one bucket clamp
loose W side

Dryer furnaces No 1 Dryer
furnace has 5 bad grate bars - several bricks
loose on top of fire box near door -
No 3 fire box will soon need new grates.
Brick arch No 1 fire box needs repair

Coal Conveyor No 1 Dryer
Motor No 630 driving conveyor is exposed to
dust =

Picking Belt,

Hole worn in hopper = roller feed nearly worn into where check plates wear = Hole worn in chute = New check piece wanted in hopper = Drive belt needs taking up tonight = Chute from Dryer has hole worn in it at bottom where fastened to Dryer Gate in Chute to 24 Rolls worn through = Hole in Chute from Dryer to belt = 2 pulleys loose on Counter shaft driving Conveyer = Have pair turnup pulleys put back under Cow belt = Conveyer needs taking up =

~~Top of No 1 Dryer~~

No 1 Dryer —

Pinion bearing driving shaker loose —
Bolts sheared top lever = screws in 2nd & 6th lever
loose, = Bolts sheared 2nd & 4th lever of shaker
No 2 lever sheared = Oil runs down dryer
Chute onto No 2 Conveyer belt =
Button lever sheared = Door at top 1 Dryer
sheared be made secure = Dust is leaking out of
Fan door — Sheet iron sheared be placed
around Crusher Bldg where Dryer ashes
is thrown out by fireman —
Grease cup pipe on top lever of shaker is
broken = Babbitt is loose in Wend
bearing of Countershaft driving Dryer fan
& exhauster = 4th lever of shaker sheared =
Top row of plates in distributor worn nine
holes worn in plate in feeder to distributor
= plates are warped at intakes = button
lever shaker sheared = button lever on
shaker front = Top lever sheared =
plates in Chute delivering to Dryer
heavily worn through = new piece
of rubber wanted on door of four top Dryer
Make provision for new screws top Dryer =
Retainer plate in conveyer chute worn out

flights in distributer are nearly worn out
Holes in division plate in hopper over
distributer. 12 inches dust in flue
chewing in dust house = Set screws loose
in shaker drives = Hinge broken on door
over shaker = Bolt loose in block in
lever driving shaker — 1/16 inch play in
bore of gear wheel driving shaker.
One shield wanted on furnace fire door =
New grate wanted fire box 1003 =
Some plates badly warped = dust breaking
out of fan = 4 levers sheared on shaker =
two bearings on Countershaft driving
shaker. Worn too much play = shields
on fire door furnace need repairing =
One shaker lever sheared = Brick in bottom
intake need repair = plate warped at 2nd
intake = Sprocket chain driving shaker jumped
off 3 times today = Hung set screw in sprocket
driving shaker drilled into shaft also
Collar put on to prevent shifting — shaft
broken on idler of sprocket driving shaker =
Top of furnace shaft cutting into sheet iron
2nd & 6th lever shaker sheared =
Over belt driving shaker needs taking up
2nd & 6th lever sheared = 2 levers sheared

Dryer 1

2 end bearings of Countershaft driving
shaker need tightening = oil pipes straw
holes need repair = shaft in fan bottom
of dryer cutting into sheet iron =
Blades on Exhaust fan worn =.
One lever sheared = Cross drive belt to
shaker broken = 1003 lever sheared =
Countershaft bearing loose next to sprocket
driving shaker = Pulley on fan top
Dryer is loose on shaft
Belt brake on blower top dryer
Bearings very loose next sprocket
driving shaker — Oil pipes leaking
on Countershaft driving shaker
plate in overflow chute top Dryer
has 2 holes worn in it =
Hinge on door in top of overflow chute
top Dryer rusted fast = Make provision
for new screen plate = New division
plate wanted in distributer = New flaps
wanted in screen = plates in distributer
worn very bad =
Fan blades in fan worn bad =
Pulley loose on shaft driving fan
top blower = Dust discharge pipe
from fan should be cleaned.
Bottom intake should be cleaned

Dryer 1 Continued —

No 2 Conveyor -

Canvas on gear casing of drive worn so dust gets in - Belt washing on a piece of wood = Idler bearing about worn out in idler pulley under 2 Conveyor - Belt wearing on cross pieces that support turnups = Oil nipple of driving pinion bearing leaking = Two unions leaking on oil drain pipe head of 2 Cyl Canvas torn on pulley bearing driving 2 Conv One idler bearing worn = Belt needs taking up tonight - Idler bearings pin worn do not oil well = Hose needs repair on conveyor pinion New rubber flaps wanted = Delivery at head worn bad = Delivery is now worn through =

No 3 Countershaft =

Oil leaking out shaft bearing next to the universal rawhide leaking also = 3 pulleys on this shaft are loose on key & shaft = Babbitt loose & end let. shaft lift = oil leaking =

3 Elev Continued

One clamp slipped =
Oil leaking out pinion shaft bearing next to ratchet wheel = Oil leaking out of pinion bearing = one bucket clamp loose
Bottom drum is raised too high =
Springs on Cups sticking rest heads in frame at bottom = Conveyor needs repair
bottom drum a new piece iron plate wanted in
Chute from Elev to Stk House = one bucket clamp loose W side = Wheels very dry =
Oil drain pipe union leaking bad on pinion shaft bearing next ratchet wheel =
~~Hole in chute~~ found 2 were broken in rope
Bolt clamps on rope very loose =
One but rope clamp slipped W side =
Elevator pinion shaft broken caused by both breaking in Mortice wheel =
Oil drip pan under ratchet leaks
Oil leaking out pinion shaft bearing next to drive pulley =
Both bolts loose in Coupling on pinion shaft = Hopper leaks =
Springs on oil Cups head repair =
Bolt in clamps should be lightened
Have new door put on delivery head
Barrell should be placed under pinion bearing W side
Catch oil

No 3 Elevator

Bolts loose in bearings Counter shaft 3 Elev
" " top bearings =
" " Head pulley bearing
Stay bolts in Drum loose = set screws in bearing
Couplings Elevator drive loose = 2 unions leaking on oil pipe near 3 Elev drive =
Oil leaking very bad out of bearing next to 3 Elev drive pulley = Oil drip pan should be Emplied = 4 sets of Tyler double rope
Clamps have slipped together = 5 =
Buckets seem to have slipped together =
Mortis bottom rail on 3 Elevator worn 1/4"
by flange on wheels = Oil tank overflows
Grease cup on Counter drive pulley is loose = Shovel springs off = Carpenters working on 3 Conveyor left pile boards lying unfloor = set screws loose in collar
at shaft wheel shaft driving 3 Elev =
Canvas off frame = Oil leaking out of pinion bearing = Hole cut in bldg to
Dust canvas not been closed = need new roof over Elev = Oil leaking out of pinion bearing = Coupling on ratchet wheel
shaft have bolts loose = Hole in chute
delivering to Elevator = bottom drum raised too high = one clamp slipped =

No 3 Con

Mud off 3 bolts in buckets W side = Tail end sprocket wheel is not centrical with track = one bucket clamp slipped = found 8 wires cut in rope due to accident or carelessness rope otherwise ok = ~~one bucket clamp slipped~~ = 4 bolts broken in buckets E side 4 on W side = springs on oil cups need repair 8 on East if on W bolts broken = Bottom guide rail Tail end very loose W side = Upper top guide rail clamp loose at head end 10 bolts out E side 5 out of W side = buckets = have rails tail end and circle rails brought to gauge & fastened so they will stay Conveyor has jumped a tooth at tail sprocket but it has come back straight = 6 bolts W side 9 East side out of 6 buckets = Conveyor again jumped a tooth in Tail sprkt = 20 bolts out E side 15 out west side buckets = 9 bolts out brackets = jumped tooth again at tail end = pneumo shaft bearing needs Canvasing = one end of the broken that holds bottom rails together at head end again jumped a tooth Tail end = Bottom guide rail very loose tail end = Con jumped a tooth again tail end = oil leaking out union head of Con

No 3 Conveyor =

20 wheels have broken spokes = wheels wear low spots in track where they come over sprocket both ends = off the track, track spread = Oil pipe broken E Gearing Tail End = Bolt loose Tail end Gearing East side = Conveyor two block = Tail end needs to be lined up = Teeth badly worn Tail end sprocket = Two bolts have loose slat bucket drop = Oil running out Gearings head end = 4 buckets have bolts out of them = Bolts put in buckets not right heads of them Extend too far out - liable catch sprocket other bolts have no bushings in them = Mud off buckets 51 x 6 x 113 East side =

Angle shaft driving Elev 3 & Con 3

Set screw loose in sheave driving this shaft. Oil leaking out of angle gear Gearings Drive pulley on angle shaft driving 2 Con Came loose = Wheel on great angle shaft be spotted so set screw would hold = Set screw groove in drive sheave Canvas torn in bearing next to the wheel = Grease cup nipple broken off in E Tail end bearing = 17 bolts out buckets = Oil leaking out pinion bearing head end = Oil leaking bearing next to pulley driving Con

3 Conveyor Crusher
5 6 acts just 6 wheels W side 4 on
East side — Set screws loose in Tail
End sprocket —

Big Rope drive North side
~~Hefa[illegible] on rope sheave~~
~~beam~~

Small rope drive for Elevator No 2
Rope needs to be taken up

Examiner for and Stock House 101
Motor wards Canvassing =

Stock House No 1

Have holes cut in floor under 3 Cov crushers = Have box made Hold 3 to 5 gal oil Can and stock House at top = Hot bearing on motor caused by grit or scale in oil pipe =

Valve on oil cans that oil motor were left open pipes filled up with oil + rubber hose Dust letting oil run on floor =

Door left open in Motor room allowing rain blow in = Wire rope used to open hoppers needs more idlers to support rope it drops down on guide pulleys = gate is fast in No 1 Hopper = one bearing on fan Motor very warm = fan bearing getting no oil = Motor Bearing running very warm = Drip Can of fan bearing overflowing = Dust accumulating on motor = fan bearing getting no oil = Drain can at fan overflowing = oil drain Can overflowing at fan = 3 days afterwards Oil Can overflowing day screws washed Hopper No 16 under Stock H = Rubber hose broaked on oil Can oiling Motor =

Blower Exhauster No 1 Dryer

Dust catcher House No 1 Dryer.

Pit of No 1 Conloss

Pit of No 1 Elevator

Pit of No 3 Elevator

Set screws loose

Bolts loose

Splice belt

Logging loose.

Power House

No 2 Corliss Engine
Water in fly wheel pit reflex up to belt.

Jack shaft No 2 Corliss Engine
Pulley Driving No 242 Dynamo 6 bolts loose in the rim — All cap-bearings are loose on the jack = Bolts loose in rim of pulley that drives 235 Dynamo = Bearings on jack have oil holes open exposing bearings to dust =
Water dropping from steam pipe onto main driving belt = Running at big belt flimsey + dangerous = One rivet out lapping main drive belt on jack =
Oil leaking out union W end driving jack shaft =
Bolts loose in pillow blocks —

Air Compressor large
Backknock in Crank shaft bearing
The jam nut on screw for adjusting this
bearing is loose = Water pipe from
Compressor leaking =

Air Compressor small.
Cap on Crank shaft bearings are loose =

Porter Engine —
Drive belt on Engine is wearing on exhaust pipe
repaired for months

Dynamos Power House

Several rivets out 254 Dynamos pulley
Driving belt of 197 Dynamos has loose
rivet in pulley = wearing belt =
Dynamo 385 needs drain pipe to
bearings = 2 rivets out of lagging
254 Dynamo
Repair bedding No 16 Dynamo for 12" mag
next to Commutator =
Bearing on Dynamo on 12" mags heats just
as bad as before fixing bearing =
Rivets taken out 254 Dynamos pulley lagging
were left lying on machine = Have
shell on 32 Dynamo scraped on Commutator
side =

Climax Cart
2 pails scale Taken from No 9
9 is in better Condition than when
last Examined —

Climax boilers pumps Power House
No 7 Climax boiler has a coating of scale on
shell + Tubes 1/32 thick, boiler muddy = Soda
used to prevent scaling in spite. vis. bio =
No 9 boiler has scale on shell + Tubes
1/16 thick boiler clean = Shields wanted
out 4 for doors = Kerosene lubricator
does not work = 2 pails scale taken out
No 9 today = one plate of mud arrester on
top No 9 has dropped down = average
thickness of scale on shell 1/32 + to
very hard = Scale in tubes of No 9 to
3 pails scale taken out 10 climax boiler
average thickness scale on shell + tubes
1/16 inch scale comes off easy =
new shields wanted on fire doors No 10
Climax = No 10 climax took 1 pail scale
out = scale in tubes coming off = a coating
of scale about 1/16 has started at bottom
of shell + extends up to feed pipe —
Examined No 9 Climax took out 2 pails
scale — scale comes off easy boiler better
Condition than last time Examined =
Took 25 pails scale out No 7 boiler —
scale 1/16 thick on shell No 7 very
hard = blow off + feed pipe No 7 badly
burnt putrescence today —

Mill 1

French Engine,
Throttle Valve out order = worn like center
Cap screw on Engine crank shaft turned up ...

French Engine Jack shaft in Engine house.

Belt loose on main driving pulley & end of Lineshaft — Leaking oil pipe oiling bearings = 2 oil cans taking drain overflowing = One rawhide leaking on shaft bearing Belts full grease = Oil can securing drain overflowing = Have patch put on drive belt = belts greasy = again 10 days after Belts greasy =

French Engine main shaft in mill
One valve leaking on bearing center shaft
Main drive pulley has several nuts worn off
hanging = Grease showed to wiped off Gratt
again reports grease showed to wiped off
in main belts = Oil leaking out of W
end bearing =

French Engine House from dust

Babcock & Co Boilers Mill 1 & pumps
No Kerosene Lubricator on Boilers
Soot around mud drums = Kerosene
lubricator out of order = 7 headers leaking
in front No 1 boiler 2 leaking in back —
Short tubes leaking in mud drum — No 1
Soot should be cleaned off of mud drums
Vertical tubes No 1 = 3 headers leaking
in back of No 2 Soot should be cleaned off
Foreman neglect shut water off tank boilers
~~too~~ feeder feed pump stops —
2 front headers leaking in No 3 boiler —
Soot should be cleaned off mud drums &
tubes Nos 2 3 & 4 B&W — 7 front headers
leaking in No 1 — several back headers
[redacted] leak on No 1 —
several back heads & 3 short tubes
leaking in No 2 2 back headers
leaking on No 4 — stops should be
put on front of boilers prevent doors
blinking water Columns —

3 High jackshaft —
Bolts loose on driven pulley — bolts loose
in pulley driving 4 & 5 Conveyor = Vertical leaking
on main oil pipe over main 3 H. Roll drive =
Oil pipe leaking W end bearing jackshaft —
dagging on belt tightener main drive
needs looking after, Canvas is torn on
idler bearings = Collar on belt tightener
main drive belt has piece broken out
Cant keep Canvas on = Main oil pipe
at jackshaft leaking in several
places = Several belt hooks in main
belt driving the jack are loose &
broken = H.D.S. bar drive belt taken up.
Main drive belt wearing on foundation;
set screw loose in main drive pulley on main
jackshaft — Hooks should be taken out
by 36" drive belt = set screws loose in
main drive pulley —

4-5 Conveyor

RR track heads running over 4-5 Con
Main oil pipe leaking at Valve, head of 4-5
Belt running under guide pulley - 2nd
pulley from S Elev in stock House =
Idler pulley shaft bent in pump house
section = Bottom belt running on
top guide pulley in pump house section
Bottom Idler pulleys running in water
under No 1 stock House =
2 Idler pulleys are loose on shaft
near center stock House = one Idler
bearing under stock H has plug out of
it = Oil tank head of 4-5
overflowed = Inspector suggests
some of the guide pulleys be changed
in position =
Main oil pipe oiling friction clutch
leaking bad = Lagging loose on Elev =
Main shield put at tail 4-5 to keep
shaff-off bottom of belt = rope not
in good condition on Idler belt =
Idler pulleys on incline dont turn too low
Wood lagging on several Elev loose =
Main Dd belt rope coming loose =
= take up 4-5 Conv belt = Lagging loose
on Idler of 4-5 Con

Idler bearing under RR runs hot =
Lagging loose on Idler on Conveyor =
Shaft bent on one Idler in pump house =
Spring off guide pulley at pump house =
Oil leaking out under head of 4+5 Con
Have safety Clutch repaired, bolt worn to
Lockup = belt runs on top guide pulley
in pump house = Rope is creeping caused
by dampness ? = Have idler Collar on 4+5
Con lowered one inch = Set screw loose
in pinion shaft = Oil leaking out of bearing
next to friction wheel driving 4+5 =
pinion driving Con 4+5 works loose = Suggest
Collar between pinion + bearing = Dust
accumulates under 4+5 idler back 3 Elev =
4 & 5 in pulleys in lower belt near tail end
not setting central with belt = One guide
pulley in pump house has spring off =
Wooden lagging loose on Idler pulley
near head end = pinion driving Con shifted
again = Conveyor belt needs taking up =
Chips wanted in door on box over friction
clutch driving 4+5 = One Conveyor oil
wood pulley bearing is loose around the
shaft = Oil leaking out bearing next to
friction pulley driving Con =
Rawhide lacing [illegible] = Idler Bearing

4+5 Continued –

~~Between Opens under No 1 Step No~~

Rope rawhide or lacing in one is needs
repair = Have extra set friction shoes made
for friction clutch = Wooden lagging off
idler on Con opposite 3 Elev = nuts
loose on bearing plate - something should be
put out tail end to prevent anything spilling
between belt + pulley = Idler lagging
loose in pump house = Conveyor rope
wearing on cross piece in pump house =
Drive belt needs taking up =
Dust accumulating under 4+5 back of
Elev 3 = Hole worn in plate delivery
from 4+5 = Conveyor belt needs taking
up = Lagging loose on all Elev
plate should be put in head of 4+5 =

Mine pump at 4+5.
Elbow leaking on steam pipe in
pump House 4+5 =

McG + S Engine & pump Mill No 1
& Jackshaft) =
Set screws & bolts in hubs & rims of main
drive pulley of Engine are loose =
Set collar on jack is wearing canvas on
middle bearing = Steam pipe feeding Eng
leaking at flange joint. - Water is running
on Main drive belt for 3 H Rolls pump =
3 Tees & 1 union leaking on oil pipes
Jack shaft = Driving belt is Tighter than
the other, bearings get Warm —
Canvas worn on Bevel gear Casing by Keyway
also causes oil run out of shaft casing
over

Dust gets in from Mill =
Tighten up belt East side McEng
See if you can fix side wall Big mfce
House under floor =
Water in pulley pits should be watched
Water was within 9 inches of pulleys
Union leaking oil pipe jack shaft bearing
Union leaking on main oil pipe drawing by
Mac jack bearing = Dust gets into Engine
house through cracks in partition =
High pressure Valve works jerky when Engine
starts = works regular when Eng starts down =
Door of Water Ventilating house has no latch dust
gets in = Oil cup getting on drive belts of Engine
Oil Cups on Ventilating Water need looking
after = 2 grease cups lying on ground
East Engine house & Belts will have to be
taken up soon = Belt on Ventilating fan
Water needs taking up = Keep valves
leaks = Steam trap = blowed all day =
again same often a week = Water running
into pulley pits comes from Engine drips = Hot crank
pin = Oil on big belts = ~~[illegible]~~ oil hose
bursted 2 end bearing Eng = Steam trap blowing
off = Valve leaks = Oil drum pipe stopped
up 2 end bearing on Engine = Union leaking
in oil pipe on Engine room = Steam pipe in
[illegible] =

Screens over 14 mesh 3 High =
Have Competitive look over screens =
Splice broken in drive belt for screen roller feed

Big Mac Cutting =
Belt loose in back of pulley on Engine jack shaft
that drives N mill line shaft = rivets wanted in
lagging = New lagging wanted on belt
Lightner pulley on belt driving N mill line shaft
~~and screw loose [illegible]~~ Heat forming on
Eng jack shaft Caused by sight feed
stopped up with dust =
Set screws loose on drive pulley
on Eng Mc driving N mill line shaft =
Steam trap blowing off Continuously Valve leaks

1st 14 mesh 3 High =
New check pieces wanted =
Valves on oil pipes oiling 3 High rolls
bearings in loose + tight + guys
troubled in regulating oil feed =
Take up drive belt Roller feed =
Reducing valve on 14 M.R does not work =
= Have pipes fixed = put new check pieces in =
Have wire rope looked over = Wood Hopper leaks
Cover over chute is worn through =
Sent that the reducing valve is fixed =
Oil leaking out bad gear bearing = Mr Gay
Suggests longer guide wheels for rope =
Screw joint leaking on oil pipes
at base of rolls = proof of oil at base
of rolls came from bearings =
Tee leaking out of union near valve
on main oiling line — Pistons leaking
in air cylinder both sets rolls =
Leaking in air receiver used to supply air
to 3 H Rolls — 2 Tees leaking in wobbled
shaft bearings = bottom of screen hopper
worn through = Screens in hopper worn
through = Have set to screws for calling ~~down~~
in order they will go in hole drilled in shaft
Caps on Centre roll is loose ~~both~~ two bolts
stripped = Tee on oil drum pipes too high

Wire rope has several lines broken =
Grit + dirt accumulate on rope sheaves
wheels = oil cups wanted on 1 & 4 roller
feed hopper = Screws out of bracket
Screening pipe that oils Smith Bottom bearing
Screws loose on oil casings on intermediate
roll bearing inside & outside S bearing =
= Screws have thread stripped top roller
bearing Smith. = Wire rope worn bad
+ wind broken = New check pieces
wanted = Division piece between 1st &
2nd 14 m rolls delivery has a hole in it =
Raw hides need repairing = Hot bearing =
bottom = Wobbler broken = nut off of
bolt in hinge of rubber flap =
Screws out S middle oil casing =
Screen hopper wearing on bottom roll =
Roll getting fin on it = Hole worn in door
on top hopper bolts out of rubber flap on
same = Hole worn in division plate
in delivery = S bottom oil casing loose
Check pieces wanted = plate in front of
roller feed on screen over roll worn through
front plates roller feed hopper need repair =
Hot bottom bearing =
S off rubber flap roller feed for screens
worn off 2 roller feed

1st 14 M Continued =
New check pieces wanted =
rope is rubbing on limber at head 4 + 5 Con
wants cutting out = Hopper for screens for
roller feed worn through = new flaps wanted
on gate = Hole worn = front plate on screen
roll feed over 3 High = Oil pipe need changing
at head 4 + 5 = Roll rope will soon hit it on south
side = New rope wanted = side bearing
wants tightening up bolts loose = New dust
guard for ropes wanted = S end = new rope
put on fits sheave tight over rolls =
7th 14 when new wobbler put on by Keeys
was not levelled up right = end of shaft
raised up so high made wobbler bind =
Rope needs taking up = large gear
used for turning off is loose on shaft =
Heavy oil casing put together in bevel gear
New bottom wanted on chute =
New gate wanted on Hopper =
Weight broken on lightener on belt
driving roller feed screens =
Wood lagging loose on bottom roll
pulley = Tooth loose big angle
gear = Nut loose on bolts in rope
sheave wheel bearings over roll =
New rubber wanted on wobbler

1st

14 Mesh & Cont'd

Rolls need turning up =
New rubber check pieces wanted on Roller f
One vertical stay bolt loose =
~~Counterweight~~ Canvas wanted on
roller feed bearing

2nd 14 Mesh 3 High =

Feeding pipe oiling rolls looks badly on
S side = Top sheave wheel
bearing runs hot = Check piece wanted
New pieces of rubber + one clamp
wanted on Roller feed = Counterweight
screws loose holding bushings South
Bottom bearing — Oil coming on S
bottom bearing not tight = 5 wires
broken in splice of rope = Rubber flap
worn out = New check pieces wanted =
Safety Valves on 3 H Roll blowing off
Continuously = Hole in bottom of Hopper
One stay bolt loose = Rubber check
piece wanted = One angle plate has
hole in it in top chute = Hole worn in
bottom hopper = Cap screws loose
S middle oil casing = Cap screw loose
S bottom oil casing = Drip pipes wanted
to be tightened up = Oil coming looking badly
Bottom hopper has holes worn in it =
One new check piece wanted = New flap
wanted in screen plate = Hole worn in
side of delivery from roll —
Have screens plates over rolls put in tomorrow
Wood lagging loose on pulley on
Golland Rock

2nd 14 m Rull Called

Canvas wanted on rollers for Training

New check blocks wanted —

Main air pipe over rails leaking

1st 50 mesh 3 high —
Oil pipe leaking that feeds wobbler
bearing = Bottom bearing runs warm =
Bottom bearing runs hot ~~wobbler side~~ =
Have pipes fixed all joints leak = go ahead
fix up Rolls = Rawhide leathers wobbler
Bearing - Too leaking also =
Bolt loose in thrust bearing = 3 new
screen plates wanted on screen over roller
Cap screw stripped middle bearing oil
Casing N side = Middle roll spilling fine
N end = one bolt out dirt guard on bottom
roll N side = one bolt loose top
thrust bearing = one nut loose on stud
in S bottom oil casing = Turnbuckle
hook needs repair on shell feed = oil
pipes need repair =
Bolt loose in collar on middle roll shaft
that keeps shell in place = Bolt loose on
Collar on bottom roll shaft S side =
Rope needs taking up —

2nd 50 mesh 3 high –
Oil pipe feeding wobbler bearings leaking at union
One shive wheel is out line with the other
Causing rope to wear = top sheave
wheel rims hot = Have bolt on
guard on top of bearing locked
they work loose = Hood leaking on
Main Oil pipe caused by not being clamped
properly = One sheave wheel is not
in line with rope = Direct guard off
South Side = One piece shimming out bearing
East side bottom = New plate wanted
underhopper to keep wood from wearing
Have logging put on roller feed drive =
Have to bolt a plate across the top of bearing
to hold down the side shims this plate
to be bolted down with bolts that hold
deflecting plate put in 5/8 bolt =
Clutch is broken = piece wood loose
under air cylinder South bottom bearing
hot = Wires broken in rope = Cap
loose on thrust bearing on middle
roll = Bracket support for oil bearing off =
Nipple broken off N bottom bearing
Bottom bearing runs warm = set screw
out of collar on top roll S side –

4 Elev Cont

found 9 wires broken in rope —
found 11 wires broken in rope week after —
Drive belt hits timbers —
One wheel off — Oil leaking out of
pinion shaft — W side — Bolts are loose
that secure tires on top drum —
Top bolt loose in rail N W side —

Elevator No 4

Oil pipe feeding pinion bearing showed
to have made seems Vibration of pipe causes
joints to leak —
45 deg Elbow on main feed pipe feeding
bearings at top leaking —
Springs on Oil Cups of wheels are
weaned in frame caused by track
being worn at bottom Elevator —
Wheels are very dry — Elev is running
to W side causing flanges of wheels to
wear on clamps —
Have back of delivery top Elev back cut
down lower — dogging loose & worn
out in lighters in belt driving Elevator —
3 wheels have flanges entirely worn
off — Northwest top rail is worn so bad
clamps strike rail — flanges on wheels
worn very thin — Wheels very dry —
6 rawhides left disconnected by night gang —
Bolts in braces — brackets — splices & rails
should be tightened — clamps wearing on
frame — Bottom drum too high —
4 wheels running very dry — Drive belt should
be taken up — Wheels & bushings worn very
bad Can't keep oil in them — Have remainder
of old wheels replaced by new ones bought

Elev 5 Continued
Nuts loose on stay bolts in bottom
Elev drum — Oil leaking out of
~~Primary shaft bearing drum 5 Elev~~
bevel gear bearing driving Elev —
Oil leaking out of pinion bearing top

Elevator No 5
5 sheaves wearing on frame —
Oil leaking out bevel gear shaft
bearing next to pulley driving 5 Elev
Canvas loose on bevel gear bearing
driving 5 Elev = Shearing pins
were not tightened this morning =
Neither rail trail is worn very bad —
Have bale on belt tightener drive for Elev shortened
Bottom drum is too high = Bolts in braces
brackets splices + rails should be tightened
= Wheels dry = oil ditto week after =
Drive pulley 2 3/4 out of line with pulley on
driving shaft = Belt tightener on driving belt
should be put in line =
Wire rope drive to Blower end
Drip pan at bevel gear causing
rope sheave running over =
Oil leaking bad drain pipe bevel gear
driving wire rope sheave ? =
Wire rope very dry found one wire
broken in splice = Sheave wheel
loose - mentioned tighten set screws twisted
them off = The drive rope will have to be
taken up soon = Wire rope needs watching
that it dont come in contact with manilla
drive rope of Dryer =
JWW

running rope wearing on opens rope =
Bottom drum too high = no way broken in rope =
Oil pipe leaking near shearing plate =
Rope should be taken up tonight

Elevator No 6 =
Oil leaking out of pinion shaft bearings
Drain pipe seems to be stopped =
Key in Counter shaft driving 6 Elev wearing
Canvas = Canvas torn on pinion shaft
bearing drive = Oil pipe feeding
gear bearing leaking = Oil leaking
out pinion =
Bolts loose in pinion bearing = oil
pipes should be secured =
Take up screw 6 Elev cannot run (thread
nut down on thread = bottom drive
bearings not canvassed = when Elev
runs slow dirt drops off back of
buckets & lodges on Blower floor
line shaft bearings = Lagging off
tightener on belt driving Elevator =
Large gear casing vibrates 1/2 inch
Bolts loose in pinion shaft bearing next
to ratchet wheel = New pulley wanted
for belt tightener lagging wanted on same
Elevator runs to west side & wearing on
beard rim top =
Worn belt tightener put on drive of
Elev = Ratchet wheel loose on key =
lagging loose on counter shaft drive pulley
Oil tube top Elev already empty 10 am =

Elev 6 Cont'd -

Belt tightener on drive is broken - no bagging on pulley = Oil pipe loose on pinion shaft bearing next to steel wheel = Belt driving Elev wearing on wood = Oil dripping out of gear casing pinion bearing =

Dryer No 2

Canvas torn off bearing next to rope sheave wheel 2 dryer -
Oil pipe oiling R feeds leaking bad drain pipe seems to be stopped =
Drip pans under roller feeds pipes leaking
Oil leaking out of bearings on fan
Drum pipe, draining rope drive sheave
Countershaft bearing at Dryer should be
Secured against vibration =
Oil leaks out bearing of Exhaust fan =
Water in pit bottom Dryer =
too much lateral motion in Countershaft driving fan bottom Dryer =
Rope driving Dryer wants taking up =
12" dust on discharge pipe Exhauster =
Rope driving Countershaft in Dryer wearing on rope tightener frame - Caused by being too slack = Oil running out of fan bearing top dryer + dropping on Countershaft drive =
Union on pipes draining bearing Top leaking near Can 12 = Oil leaking out of fan bearing top Dryer = piece of wood lost
Countershaft driving fan in pit and to at bottom dryer needs to be braced = too much vibration in pipe oiling W end bearing sheave wheel

Bolts in Coupling on sheave wheel shaft at Dryer came loose & were tightened up by Millwright - would suggest bolts be riveted = Door over oil light feeder is broken off = Belt driving Countershaft that drives fan bottom Dryer should have splice repaired = Bearings on rope tightener run hot = Distributor has hall worn in it = Bottom air passages is entirely stopped up with dust = Rawhides leaking top Dryer Manilla drive rope should be taken up Sheave wheel on Countershaft at Dryer loose on shaft = Discharge pipe nearly full dust = Belt tightener on belt driving Counter that drives fan bottom Dryer needs repair = Rope drive should be taken up = too much vibration in Countershaft driving fan at bottom Timbers holding bearings needs bracing = Belt driving fan should be taken up tonight = Oil leaking out bearings nut to rope sheave. Rope sheave wheel loose on Countershaft at Dryer = Coupling on Countershaft driving fan top dryer has bolts loose in it = Discharge pipe is full dust = Teeth loose in angle gear driving Dryer

Dryer 2

Drop pipes stopped up on angle gear drive = Bolts loose in coupling on Counter shaft driving fan = dragging loose on tightener on belt driving fan top dryer = Manilla drive rope should be taken up tonight = Drain pipe stopped up S.E. bearing roller feed on Dryer.
45 deg elbow leaking top Dryer
Belt needs repairs on fan bottom Dryer
Bolts loose E end bearing Countershaft driving fan at top =

64 mesh screens

Canvas belt off sprocket line shaft, bearing 14 m screens — Some sprocket chains driving roller feeds are wearing and trans supporting bearings —

Sprocket wheels on counter drive roller feeds have 2 bolts out of it.

50 Mesh screens =
Leak =

12" Magnets.

8" Magnets.
2 unions on feed & drain pipe that oils
bearings no sprocket chain line shaft
are leaking = Canvas on W end bearing
8" mag Conveyor shaft torn =
2 unions leaking on oil pipes 8" mags =
New sprocket chain needed down No 2 brush
roller feed = One chute over No 3 North side
magnet under 20 ½ Gn broken =
Oil pipe leaking on line shaft
N side =

Blowers Dust bin & scraper Conv
T & union leaking on oil pipe near gear
that drives blower countershaft =
Oil leaking very bad out of gear
bearing on Blower Counter =
Oil leaking out gear bearing on
Counter is caused by Keyway in shaft
Nos 6 + 7 Roller feed in dust way
run over the end blower floor =
3 wood pulleys on main shaft loose
in keys = Set screws or bolts come
1x 6 loose in sheave wheel on
blower floor line shaft — Wheel wobbles
16 + 24" belts on blower floor should be
taken up = pulley driving No 7 blower
shifted on shaft = one wood pulley
loose on key line shaft =
No 7 blower striking on side of
Casing =

4" magnets,
Reversed Bad leaks in oil pipe oiling
4" mag Countershaft =
One clutch on Counter needs to be
Canvassed = Canvas is off clutch
that drives roller feed =
Roller feed sheaves on bank 5 =
Clutch on R feed bank 6 dont work =
Oil Leaking out Countershaft bearing =
Untrick thread is stripped in bearing =
Clutches stick = an opening S
Side of 4" magnet floor back of 6 clear on
E end 4" " floor = leak at dust way
4" mag floor = No 5 bank roller feed
sheave Constantly = Belt driving line
shaft runs to one side = rawhide
leaking rust end bearing of Countershaft
driving 4" mag lineshaft = Drain pipe
also stopped up = Sprocket chain jumped
off roller feed = Sprocket chains driving
roller feeds are so close to magnets that
when current on draws them in so they
Cut in foot of magnet 1/4 inch
Minus sprocket on bank 4 is out of line
No 6 clutch lever shaft N side 4" mag
loose in Coupling = new Canvas wanted
Countershaft bearing Minus 4" mag floor

Sprocket wheel on bank No 8 is out bi.
on South side = oil pipe on stands needs
repair on gear bearing bank No 1 =
Screws driving pulley for No 1 bank badly
worn = 2 clutches need Canvassing on South
side = ~~platform wanted Top~~ m

Belt machines,
Canvas torn on Counter shaft bearing driving
belt magnets = Key in Countershaft is working
Canvas = Oil leaking out bearings
next to belt magnet Counter shaft =
Oil leaking out friction clutch bearing on
end Countershaft driving belt machines
= Union leaking on W end bearing Countershaft
Dust gets in bottom roll belt mags =
Have new steel put in clutch of magnets =
Guide wheels are wearing edge of belt on
Separator = New canvas wanted on friction
clutch = new steel wanted in friction
clutch No 2 machine = Have extra friction
shoes made for No 2 belt mag. drive =
platform wanted over top of mags so
man can oil bearings when running =
Steel out friction clutch No 2 Belt Drive =
Take up screws No 2 want cleaning
up + Canvassing = clutch on No 2 needs
new pin + steel (tightens) =

Stock House

No 2 Stock House
Door Broken =

Fire apparatus

2 hinges broken off box 1
No spanner wrench on fire plug 1
No spanner wrench on " 2
3 Hinges broken off box 2
Coupling on one end of Hose broken
one spanner wrench on plug 2
No Valve wrench on plug 2 =
No 2 plug is covered with dirt so
Cannot connect hose on it.
2 hinges broken on box 2
No spanner wrenches on box 3
One hinge broken on box 4
" " box 6
No spanner wrench on box 6
Hose box 7 no hose - no crank to wind hose
No spanner wrench = No nozzle in No 7
" " " box 8
Valve in plug 8 leaking

General

Valve & steam pipe to engine at Coal trestle leaking
Skip lugs broken 1
Railing along steps leading to 3 Conveyor needs repair = something wrong in water cylinder at pumping station — Oil drain tank in Mill 1 needs to be changed = dirt & waste is causing trouble with Oil pump —
Union leaking in steam radiator between 184 & No 2 Oil tank Oil house =
A length of air pipe near the track of Victor Mine knocked out & pipe badly bent supports along big pipe are rotten = Street & Norman shovel have belt clamps & wrenches where we can get at them = Night men leave water on floor & lunches in Mill = All fire hose should be looked after = 2 leaks in steam pipe between Crushing plant & Mill 1 leaks in air line to Frankhill — 4 Valves leaking at gland packing — 3 Couplings 6 Tees 8 plugs — one Union — 5 plug unions — pipe needs supporting in many places leaks in air line to Davenport.
5 Valves leaking at plug glands 3 Couplings one T or L the pipe needs support in several places — Coal hoisting engineer is to direct

Rainwater off French Eng house roof runs into Babcock boiler room
Implement left, canvas, waste & wood lying in Concentrate foot 6 Elev=

No 1 Loco

Flange cock leaking — Dome leaking — Sand box needs repairs — check valve needs repairs — Rear steps need repair — Cover over false head broken — lost motion in gibs crosshead & rods needs taking up — ~~[illegible]~~ Brake beam bent — Jam nut loose on throttle valve lever — Brace brake w/ pot iron, no screens in tank — Water tank is rusty & dirty — pile of fish plates laying in Loco house — Cab needs repairs! Connecting rod striking on brake shoe —

No 2 Loco

Brackets supporting Headlight Loose — Lost motion in gibs, crosshead & rod = front slip needs repairs — pin nearly worked out of Brake beam = Jam nut loose on Throttle Valve stem — Spring on Throttle Valve lever is very weak = Key Loose in Cylinder Cock lever = Brace brake on petticoat pipe leaking front head Boiler — No screen in water tank = Water Tank rusty & dirty = Connecting rod striking brake shoe = one side Cab splintered caused by brakeman letting Car run into it —

No 3 Loco

Steam blowing through piston rings

Rear steps need fixing =

Link-pin Box needs repair =

Front steps needs repairing = rear step do

Link-pin box needs repairing = flues

Leaking — link box needs repair

steps need repair — front end 3 Loco

Derailed Caused by Car getting away out

Davenport brake out order on Car =

Yard Engine —

Engine needs lubrication = springs on rear truck are wearing on boiler — one cylinder cock broken = Valve gear has lost motion — Blower pipe twisted — Water tank leaks — One counterbalance weight loose in Driving wheel — Something wrong with Safety Valve or steam gauge —

Plant Operations Notebook, N-95-00-00.4

This undated notebook was used primarily by two unidentified authors, possibly in 1900; however, it may have been used as early as 1895. The book contains notes regarding repair and maintenance of conveyors at the Ogden plant. The two earliest headings are in Edison's hand. The book contains 37 numbered pages, followed by approximately 40 unnumbered pages.

29½ Conveyor —

Canvas joint is torn

— Drive shaft key wearing

Canvas - One idler pulley dry = Concentrate accumulating under belt = One idler pulley out fast = One idler bearing dry = bearing on wood - New logging wanted at head = Water wanted in barrel at head = Bearing wanted on one idler pulley Canvas splice needs repa =

30 Conveyor —

Set screws tail end pulley shaft is dangerous

— Conveyor is running to one side leaning on stirrup

— Patch on Idler pulley 30 con loose

— Conveyor belt is slack cannot grade it

— Look at motor bearings on 30 con — sigeon is burning

— Houses hot as an oven

— Several cracks in house over motor.

— Bridles on motor driving 30 Con not properly adjusted

Rubber out of oil casing at head.

Glands need packing on oil valves on oil pipes on #30 Con motor. Belt is running hard to the west at head end = Bolts loose in feet of motor driving #30 Con = Nuts taking up = Pinion on motor driving #30 Con is worn quite bad. Head is sagged down on north side seems to 1½" out of level. Cover should be taken off of gear casing on drive motor something seems to be

30 Conveyor Continued

Belt needs tightening up. Bearings hot on drive motor-motor house very hot.

12 Conveyor

Canvas torn on tail end pulley
bearing at bottom Dryer
Dahne taken up
— Have 12 can belt taken up
— Elbow leaking on oil pipe
feeding bearings at head end
of 12 Can
Tail end pulley bearing
on 12 Can runs warm.
also need cannossing
— Shaft and bearing on tail
end pulley run hot
Rawhides need rep on head end. Lagging
wanted on tail end pulley. One cup on one
turnup pulley at tail end is full of dirt.
One turnup pulley broken at head. Lagging
is loose on tail end pulley.

14 Conveyor

Bearings taken up.

Canvas splice needs rip - Sprocket chain is stretching, load on oil casing - Bearings hot on drive motor - Motor house very hot -

29 1/4 Conveyor

Drive needs taking up

One turn up pulley foot = one idler bearing dry.

15 Conveyor

Drive needs taking up

Conveyor wearing and wood

Belt wants taking up

Union leaking on oil

pipe near tail end 15 Con

Rawhides leak on

Conveyor drive = Have set screws

locked in gears at head = Both cam out

motion gear driving 15 Con = Oil leaking out

of right feed valve on tank near tail end =

Two rawhides wanted at head = Oil wanted

in gear casing = Belt wants taking up =

Oil pipe leaking of pinion bearing drive

Oil drain pipe leaking at head

29 Conveyor

Union leaking W. end bearing Countershaft driving 29 Conveyor
— Tee Union leaking on W - end bearing Countershaft and Ammonia leaking on main drain pipe of E end countershaft
— One pipe leaking 2nd floor over belt driving 29 Con countershaft
— Oil pipe leaking 2nd floor over belt driving 29 Con Countershaft
— Splice repaired
— Hooked
— Canvas cover on Countershaft bearing driving 29 con Tower
Canvas Tower on Countershaft bearing
— One guide pulley on 29 Con in 2 Hoist House is set too close to frame of building - Spring catches and cannot turn
— Keys on Counter wearing cannot over bearing
Bro Hilles learn day [Continued]

6 Conveyor
Union and 45 deg. elbow
leaking on pipe draining
6 con. drive.
— Have tail end bearing cannot
— Drys chute needed tail
end Con 6.
— Roof leak in Union at 6 Con
Drive.
— Coal wanted on delivery
from 3 High to 6 Con
— Two cannot from off
pinion bearings
— Drive belt should be
taken up = New set take up pulleys
new plank wanted at tail end = keys in
mortise gear need to be tightened = New canvas
wanted at tail end = Oil leaking out of drain
pipe at head west side = Needs patching up =
Gear for shifter on shaft = Oil drain pipe
leaking bad at head west side = Canvas wanted
on gear casing key in shaft cuts this canvas
bad in delivery at head #6 Con bottom of #4
new lagging wanted on tightener on drive belt =
Bad delivery at head rep = Hole worn thru
on take up pulley = Take out bearing on
#6 Con. [illegible]

#

16 Conveyor

Have 16 Con belt taken up
Have new flaps and take
belt off - also 16 Con under 5 Mill
3 Ms there should be guide
pulley on bottom belt
Conveyor runs to one
side of pulley allowing one
to get on bottom belt.
Repl out turning pulley on #16 Con
under 5 & M. 3 H.G. Rolls + 2 Idlers want
piping up. turn up. pulleys.

8 Conveyor
About ½ of idlers on bearings on 8 Con are packed correct, belt is wearing on pieces of wood one cross piece seeming guide pulley is loose, no bolt in it one oil cup off — no wires on turning also guide pulleys to seems. oil cups.
— Oil leaking out of Crankshaft bearing driving 8 Con.
— One guide pulley post
— Leak in post hanger Crankshaft driving 8 Con
— One leaking out bearing on Crankshaft driving 8 Con
also oil leaking out throat pulley bearing on 8 Con.
— Oil cups driving gear bearing 8 Con stopped up.
one turn up pulley post
Canvas torn off bearing next to pulley that drives 8 Con.
— All idler bearings that could be tested on 8 Con are packed with wool OK.

Continued pg 31

13½ Conveyor
Dragging lobs on 13½ Con
Commutator drive.
– Oil leaking out of gear
bearing driving 13½ Con Wente
– Dust collects along track
and jocks hard
Wheels nearly run off track
Examine motive gears driving Con
Also keep tightened & all screws looked to
New rawhides wanted – oil wanted in
wrist casing – Drive needs taking up –

21 Conveyor.
Canvas elbow worn in
Countershaft bearing driving 21 Con
— Canvas 21 Con Countershaft
bearing has hole in it and
elbow leaking on same
— Wheels are dry and worn
& chunk guard rail at head
end — Flights are slinking
wood along Con = Air control &
switch in line = New wheels wanted = Union
leaking on oil drain pipe east end bearing
of counter shaft driving #21 flight Con.
Canvas splice on belt driving countershaft
driving #21 Con is torn = New wheels wanted
on #21 flight con wheels are worn very bad
splice ripped bad on #21 flight Con = Belt
tightener on belt driving #21 flight Con
will have to be changed Guard in Contact
with 16" drive belt from blower floor to
8" mag counter shaft =

20 ½ Conveyor
Oil leaking out gear bearing driving 20 ½ Con.
— Tees on oil pipe oiling counter shaft that drives 20 ½ Co leaking.
— T leaking on oil pipe near tank over 20 ½ Con.
— Belt driving 20 ½ should be taken up.

Examine motive gears driving Con have key tightened & set screws looked to.
Tee leaking on oil feed pipe near tank at #20 ½ Con. Dust should be cleaned off of roof. Oil pipe leaking on gear bearing. On oil cup on wheel is not screwed up tight and blows out of it's tail end sprocket is not setting square. Have overflow hopper at head of Con fixed it leaks. Sprocket wheel at tail end is not setting square

1½ Conveyor

Over flow chute from 1½ Con choked comes by Carpenter not cutting sheet iron in chute correct

— 1 grub pulley lost

— Stones are caught in side of Hopper that delivers on 1½ Con & are wearing grooves in roller feed

— Valve on oil pipe feeding bearing on combed drive for 1½ Con need changing

Belt runs to wrot site = Elbow leaking on oil pipe over hopper = Rawhides leaking on pinion shaft bearing

20 Conveyor
New lagging needed on pulley driving 20 Con
Splice repaired
2 turnups and 1 guide pulley are fast on 20 Con
One Idler bearing dry
Canvas splice needs rep. Splices need rep. Canvas needs rep. Ok drive gear bearing. Rest idler bearings dry.

19 Conveyor
Have delivery at head
19 Con changed so can
load full load in cars
— Drain Can tail end 19 con
running over
— Inside dry Idlers say 1/4"
on Nuts some of these
bearings think too small
— Conveying belt slack
— One guide pulley fast
— Oil Pipes leaking out=
side 19 Con House
T leaking on pipe drawing
gear bearing 19 Con
— 45 dg. Elbow leaking on pipe
oiling tail end bearing
— 3 Ells leaking on pipes oiling
motor driving 19 con
— One Union leaking on
drain pipe on motor drive
19 Con
— Belt wearing on piece
wood near head end. *Two unions
leaking on oil drain pipes on motor drive
*19 Con. New delivery wanted on tail end = Oil
drain pipe leaking in several places on motor
drive 19 Con

19 Conveyor Continued

oil pipe leaking at reducing coupling on pipe oiling motor driving #19 Con = oil from motor bearing runs on gear casing of #19 Con = Bolts loose in fields on motor driving #19 Con = Pinion worn bad on motor = One bolt out of gear wheel = Bolts wanted in gear casing to hold same together = Two flanges both wanted in gear = Maints taking up new rawhide wanted at tail end = Bolts out of split gear on motor drive = Oil drain can running over at tail end = Rubber hose disconnected on oil drain can at tail end = Oil leaking out of motor bearing + drain pipes on motor driving #19 Con =

11 Conveyor

Oil leaking out pipe oiling thrust pulley bearing on 11 Con at top 2 Dryer

— One Idler bearing dry near tail end 11 Con

— Oil leaking out thrust pulley bearing over 2 Dryer

— Set screws wearing Canvas at thrust pulley shaft bearing on 11 Con top Dryer 2

Dust shutters wanted done and ~~at both conveyors~~ to prevent dust getting between belt and pulley

— Oil leaking out of Elbow oiling Idler pulley top 2 Dryer on 11 Con

— Union leaking on pipe running along 11 Con

— Hot Idler bearing

— Bearing on pulley roofing [illegible]

— Canvas torn on Idler bearing 11 Con top Dryer

— Bearing on Hopper at top 2 Dryer = Canvas needs repairing on idler pulley bearing at top #2 Dryer = [illegible]

11 Conveyor Continued.

Boards to be cut out so that idler bearing can be canvassed at top of #1 Dryer = One idler bearing dry = Wood lagging is worn on tail end pulley = One oil cup wanted on turn up pulley = Dust on roof = New canvas wanted on throat pulley at head south side = New belt wanted = Hooks in #11 Con western out = oil leaking out of idler bearing at top #2 Dryer = running down inside of chute = Canvas splice needs rep = Canvas on western bearing is torn = Piece torn out of Con belt = Take up bearing for guide pulley on head of #11 Con oil pipe thread is stripped in bearing south side = New canvas wanted on throat pulley at head south side = Canvas wanted on idler bearing on #11 Con at top #2 Dry = Idler pulley bearing rubs worn on #11 Con at top #1 Dryer = Ripple loose on idler bearing over head of #1 = Belt torn at splice = Splice in bad shape on belt.

22 Conveyor

Driving belt driving bevel gear 22 Con should be taken up.

— Belt driving Bevel gear shaft that drives 22 Con wearing on a piece of wood

Key in Bevel gear shaft next to pulley driving 22 Con wearing canvas.

Oil leaking out of Bevel gear bearing that drives 22 Con

— Bevel gears driving 22 Con are dry.

— Have hooks put on conv. belt and flap put on some

Bevel gears driving 22 Con exposed to dust these gears have wooden box over top but it don't do much good

— Dust can get in Bevel gear from main floor = Box + new canvas wanted on gears driving #2 Con, box is up there one turn up pulley wanted = Oil bearing out of head bearing north to gear.

7 Conveyor
Drive belt want taking up
— Canvas & washers were not
put back on no 7 pinion
bearing last night after
men were through
Bearing babbit is loose same
as before
— Canvas wanted on gear casing = Lagging
loose on belt tightener drive = New lagging
wanted on tightener pulley on drive belt =
oil pipes leaking in several places at head
New sawhides wanted = Oil wanted in west
casing = Sprocket wheel at tail end does
not set square =

18 Conveyor
One Idler bearing dry
— Driving belt wearing on
Hopper delivers on to 25 Con
— One Idler bearing hot
near tail end 18 Con
— One leaking out of jerk
shaft bearing
— One Idler bearing dry
— Dust shutter wanted
tail end to prevent dust
getting between belt & pulley
— Bit large loose & rods
inside leaking on gear bearing
driving 18 Con
— Wood lagging loose on
— 2 Idler Bearings 18 Con near
25 Con = Canvas splices need rep on belt
One idler bearing hot. On turn up pulley foot
Two pice pulls wanted along #18 Con = Canvas splices
need rep = New lagging wanted on tightener
pulley on belt driving #18 Con = Wood lagging
is bare at tail end = One revolving bearing
at tail end = splices need rep on belt.
Hole in belt = Belt wants taking up = Belt
needs taking up =

28 Conveyor
Union leaking West and
bearing Crusher shaft.
- Keys in Crusher is wearing
Carbon over bearing.
- Turn up pulley near
tail end is lost. New canvas
wanted on pinion drive. Oil leaking out of
head pulley bearing.

28 1/2 Conveyor
Canvas joints need repairing
– Splice repaired
– Main Belt M Wenny
on a piece wood – Raw hides
taking on tail end.

26 Conveyor
Spliced
— Wearing on piece of wood near tail end & Bed sagging out of pulley bearing at head End = bottom belt is wearing on wood at drain pipe leaking at head = Conv. splice needs rep. on #26 Con belt = Belt needs taking up =

25 Conveyor
Oil leaking out gear bearing
- Canvas torn on pinion shaft bearing
- Can is wearing on board walk going up to 29 Con.
- Joints in driving belt are wearing on gear casing
- New flaps wanted on chute delivering on 25 Con
Belt split about 4 feet. Oil paper leaking at end - Belt wants taking up.

25 Conveyor
Several Clears at oil pipe
feeding head end 25 Conv
One Idler bearing dry
New lagging wanted on tightener pulley
on drive belt = Hole worn in turnup
pulley = Lagging wanted on tightener 25 Con
drive = Lagging on belt tightener is in bad
shape =

17 Conveyor
Spring needs repairing
One turn up pulley 17 Con
One section runs to
one side of pulley caused
by belt not being checked
gingare - New rawhides wanted at
bins - New globe wanted on arc light -
Water mud needs to be cleaned out
along tail end - Union & elbow leaking
on oil drain pipe along tail end - Drip
pipe from packing eng. need to turn
Big Mc shows be changed water run
in #17 Con pit. Belt needs taking up
tonight - Hook pulled out of belt middle
of splice - Drive wants taking up -
Union leaking on oil pipe at tail end -
Drain pipe under 5 & 6 R is stopped up
so water doesn't run out of #17 Con pit -
Two idlers dry - One idler leaking is
full of dirt - New flow hopper &
chute delivering onto #17 Con at 50 M
hopper same as 14 M. Delivery it
had leaks badly - Holes worn in
delivery

1 Conveyor

One Car that drains in at head of 1 Car has hose disconnected = New Hose wanted on oil pipes oiling tail end = Shutter wanted at tail end = New lagging wanted at tail end pulley = One idler pulley broken = Oil hole buried on drain can at tail end = Leaking on feed pipe at tail end = Belt needs rep = Ink logging off tail end pulley = Shut iron worn out in delivery on to belt = One oil cup on idler bearing is full of dirt = One turn up pulley wanted = Belt is running to the east touching on wood = Belt runs hard to the east at tail end = Face of tail end pulley is cracked = Two cross pieces that turn up pulleys are pushed to are loose = Hose broken on can catching oil from tail end pulley bearing

6 Conveyor

Pulley bearing on gear driving 6 Con is worn = key on shaft is wearing
Carrier bearing
Several joints leaking on pipe at driving gears
New belt wanted = New belt wanted = Holes in bagging on belt tightener drive = One pair of turn up pulleys wanted tonight = Drop pipe out bearing at head wanted = oil leaking out of bearing on drive = Two gear bearing need convicing = Drive wants taking up = Hook pulled out of belt = One turn up idler on tail end is broken west side = Splice wants fixing tonight
Oil is leaking out of gear shaft bearing driving Con # 6 = Drain pipe stopped up, on # 6 Conv gear shaft bearing. Oil leaking out of bearing on drive for # 6 Conv

9 Conveyor

Idler bearings 9 Con have no wobble pocket on bottom of bearing. Belt runs to one side at head pulley & wears on no 11 Con Hopper.

Idler shafts on 9 Con are in the same condition as on 3 Con.

– One turnup pulley badly worn on 9 Con

– Rawhides leak on Conveyor drive = Three new turnup pulley wanted Belt is wearing on shutter at tail end = Oil leaking out of one idler pulley bearing = Several idler pulley turn very hard = Keyway gear shaft cuts canvas = One turnup pulley has a hole worn in it = Bearing at tail end = Oil coming at head need canvassing = Oil pipe leaking on head end = Tightener pulley on drive wants new lagging = Hame caps taken off head pulley bearing worst side but is just causing it to run hot = New canvas wanted on tail end = Belt needs taping up =

2 1/2 Conveyor
Collar on Countershaft
that drives 2 1/2 Con is wearing
on one play in west end
bearing.

8 Conveyor (continued)

Idler shafts are turned very rough while they come in contact with wood and cause wood to work out of bearing. Dirt collects on stringers that top bearings are fastened to and drops down on lower belt

— Canvas needs repairing on gear bearings

— Canvas needs repair on idler pulley next head end.

In looking on main pipe oiling head ends oil leaking out of west end counter shaft driving #8 Con = valve leaking on feed pipe at tail end, new canvas wanted on tail end pulley bearings. Rawhides wanted on tail end = Rawhides & pipe leaking that oils idler bearing at head = Canvas wanted on idler pulley bearing at head = New plate wanted in return hopper from #8 Con to 14 M Bee = Canvas wanted on east end bearing of counter shaft driving #8 Con = New lagging wanted on tightener on drive belt oil leaking out of valve stem at tail end holes in lagging on belt tightener drive at screw loose in coupling on pinion

~~Conveyor continued~~

shaft driving #1 Con. Oil feed pipe leaking at other bearings at head. Two unions leaking on oil drum pipe at Drum wants taking up. wants taking up. oil pipe stopped up at head between head-pulley & oil casing. Coupling bolt on pinion shaft driving #1 Con. 3 set. screws out of coupling.

40 Conveyor
Water in pit

7 1/2 Conveyor
Dust collects along track
& packs hard - wheels nearly
run off track.

0000301

29 Conveyor (Continued)
One Idler bearing hot
Rawhides leak on
Conv. Drive. New rawhides wanted
on tail end. Oil leaking out of idler pulley
bearing at head end. Lagging needs up on
Belt tightener - Belt wants taking up.
Pipe leaking that oils west head end
bearing.

Oil leaking out of Conv
under 14" 3H rolls
This conveyor has not
number
— Union leaking on line
shaft bearing Sheet drives
Conveyor number 3H Rolls

5½ Conveyors

Hooks put in instead of canvas splice: Shutter wants putting back on belt
Oil leaking out of head end bearing north side
Set screw loose in head end pulley.

5¾ Conveyors.

Hook bolts put in instead of conveyor splice

Z Conveyor

Have floor cut under tail end = Wants taking up = One turn up + guide pulley set too close = cannot turn = rearing on wood near head end = Bucket chain is striking hard on oil casing = One idler bearing dry =

C & S Con

One Idler shaft bent on bottom belt - One idler shaft bent on bottom belt next to tail end pulley - Wood logging loose on idler pulley - Oil leaking out of bearing next to friction pulley drive - Rope needs rep. in pump house - Rope has cut rawhide in several places & is cutting in belt - One bearing dry - Is leaking on oil feed pipe under friction pulley - Logging wanted on idlers under stock house - Rope & rawhide under rope needs rep - Logging off of one idler pulley in pump house - Logging loose on idler pulleys - Steam pipe that is used to clean oil drips is leaking - Oil feed pipe leaking on tank - Rope is cutting belt - Idlers in bad condition logging coming off nearly every day - Dust accumulating under C & S Con in pump house - Logging off of one idler pulley on bottom belt in pump house - Canvas needs rep on west end bearing of pinion shaft drive - Oil leaking out of bearing next to friction pulley driving C & S - Logging off one idler on bottom belt between C & S feeder - Idler pulley bearing has not been repaired - Wood logging off two idler pulleys on C & S Con in Stock House - New rawhide is wanted for under rope.

#4 & 5 Conveyor Continued

Fireman wanted at head = lagging loose on idlers top & bottom = Union leaking on oil pipe near tank over #4 & 5 Con. Oil leaking out of bearing next to friction pulley driving #4 & 5 Con = Need lagging very loose on idler pulleys = Two shafts bent will find paper over shafts = Need taking up =

#3 Con

#3 Conbelt runs to east & wears on edge = Bearings at head need canvassing = Wants a piece in it tonight = Runs hard to the east at tail end = Runs hard to the east at tail end = One idler bearing dry = Wants taking up =

46 Conway

Wood lagging loose on head pulley = Belt is wearing on wood = let screw should be boxed in on head pulley shaft = Oil pipe leaking on drive pulley bearing = oil drain can leaking at tail end = Rubber lagging wanted on head pulley = Lagging wanted on head pulley = Rawhide ordered repp at head end = Oil lift turned on last night =

#3 Conveyor

Tail end of #3 Con needs rep. track spread + con jumped a tooth. Left on sprocket wheel worn bad = Bolts loose in frame work tail end = Jumpd the track at head end = Springs on wheels are striking guard at head end = Two wheels wanted = Springs wanted on oil cups = One bolt out of west side + 5 bolts out of east side of buckets 17 bolts out of east + 6 bolts out of west side buckets = 7 bolts out of east + 9 bolts out of west side of buckets = Chip out flange on gear casing so drip pan can be put in bearings on #3 Con leaking on head end of drive shaft = Oil feed pipes leaking on motor driving #3 Con = Ran #3 Con put on track + run for one hour = Oil cups wanted = 3 bolts of of East + 5 bolts out of west side of buckets = Bolts loose in feed plate on track = Three bolts out of west + one bolt out of east side buckets = One wheel off of east side buckets = New shimming wanted in Nb on #3 Con = Clamp is too loose on bottom guide rail at head = 3 bolts out of west side

96½ Conveyor

New rope wanted soon = Square clamps on 96½ Con to-night = Put paper under square up clamp. = Clamps need paper under thumb & need to be straightened = Hoisting rope needs to be greased = #96½ Con should be put in tonight #96½ Con should be put into tonight if not repair chute that is used in place of Con bottom is busted =

96 Con

Bolts loose inside of tail drum = Shafts want to be spaced with rope = Rope broke = Put saddle rope in both sides = Clamps should be gone over tightened + straightened One coupling + set collar loose on line shaft driving # 96 Con = There are quite a number of buckets that are too close together + catch when dumping have these moved further apart 20 clamps very loose = Cotter pins out of two shafts =

101. Conveyors

Oil leaking out of two elbows at head. Canvas wanted on pulley bearing at head. Wood lagging loose on idler pulleys. Set screws in set collars on tail end pulley shaft should be boxed in dangerous. Two idler pulleys out foot. One idler pulley wanted. One idler pulley foot. New canvas wanted at head. Set screw in set collar on tail end pulley shaft should be boxed in.

#2 Conveyor

Oil drain pipe leaking at head east side. Union leaking on oil pipe along west side. Timber needs bracing that belt tightener is fastened to on drive belt = Oil leaking out of pinion bearing = Belt runs to the east ~~west~~ on wood = Belt runs hard to the west at head end = Sheet iron ~~wood~~ worn out in delivery from 2nd Con = Has belt rep = Oil leaking out of pinion bearing = Belt wants tightening = Timber needs bracing that belt tightener is fastened to on 2nd Con drive = Drip can full at tail end = Union leaking at head =

#31 Conveyor

Belt runs to the west. Needs taking up

47+48 Conveyor

Oil pipes leaking at head ends = One wooden brace loose at tail end of #47 Con = Rawhides leaking at head end of #48 = Mercury switch left open last night = New shoes wanted where old shoes were broken = Rawhides need repairing.

#9 Conveyor

oil leaking out of bevel gear bearings.
Wood logging loose on tail end pulley. Mercury
cocks left open on J.D. driving #9 Con last night.
Logging has not been put on tail end pulley.
Guide pulley bearing at tail end of #9 Con
need cannoaing. One idler shaft bent.
Canvas torn on gum coming over pendulum

60½ Conveyor
needs repairing.

65½ Conveyor

Strands need rep = Strands need rep = Strands need rep = repair strands = rep strands = Strand need rep very bad = rep strands.

71½ 73½ Conv

same as above

75½ Con

need repairing = repair strands on rope repair strands = strands need rep = Strands need rep = Strands need rep = Strands need rep = Strands need rep = Strands need rep = rep strands very bad

60½ Conveyor

Same as 61 →

61½ Conveyor

Repair strands on rope = repair strands
strands need rep = strands need rep =
strands need rep = strands need rep =
strands need rep = strands need rep =
rep strands very bad

6 1/2 Conveyor

Same as previous page 6 1/2

43 Conveyor

Track spread: Guide iron need bending to conform with lay of rope: Bend guide plates to conform with lay.

J. P. Conroy

~~Came to meet to see you and tightened~~
~~found it was a broken chain~~
~~at tracks plant near hard end of car #95~~

46 + Conveyor

Drain saw choked he put under bottom
bevel gear bearing. Oil leaking at head
pulley bearing & Mesaroy cooks left open at
tail end last night. Belt needs taking up.
South end leaking head end nine holes.
Running under one turn up pulleys.

9P Conveyor

Belt is wearing on hopper = One turn down pulley fast on Con delivering on #9 Con = Shutter wanted on tail end of convey delivering on #9.

6½ Conveyor

Strands need up very bad Shape filled up
Strands need up = Strands need up = Strands
need up = Strands need up = Strands
need up very bad.

106 Conveyor

Belt needs taking up. Take up drive belt.

Miscellaneous

2 Unions leaking very bad on drain pipe & end bearings in center of mill line shaft.

Hooker Counter drive top 3 Rings broke Piece out of shoe belt 2d Corliss

Hooker Belt small air compressor
Belt Giant Roll

Repaired splice on 2nd 14" Roll rope

Hole worn in canvas on bearing Manilla rope drive Mill 1.

Steam heat pipes Mill 1 filled with water.

Pipe cutter laying on ground between crushing plant and French Eng House

Motor in Foundry is exposed to dust

Grease cup nipple loose on bearings on belt tightener on main belt driving south mill line

Shaft logging also loose

Drive pulley loose on S Combe shaft that drives 2 no 36 Rolls

See 575 606
576
579
580
663

4 Conveyor

New rawhides wanted on head pulley bearings.

61 Conveyor

Rope strands need rep. Strand need rep.
Mercury cocks need rep at head end.

#13 Conveyor

Have top rail cut out next to delivery to give more clearance same as #7

H.V. Conveyor

Send guide plates to conform with assy

#44 Conveyor

Bend guide plates to conform with cage

#97 Conveyor

One turn down pulley foot.

#70 Conveyor

Put in new springs & studs where on wrg wrgs & new clutch on all wrg wrgs that are worn

71 Conveyor

Put in new spring blinds ~~than on~~ anyway + new chain on old wing way that are worn.

70½ Conveyor

One canvas wanted on line shaft beam driving 70½'s Con.

#95 Conveyor

Forward, stone in gearing & Found wood in gears & Canvas wanted on head end pulley bearings & Guard wanted over driving gears & Waste water from air compressor in B.P. empties in pit at tail end & Clamps need to be gone over & tightened & Found one worn broken chain at B.P. near head end of #95 Con.

6 1/2 Conveyor

Belt is wearing on hopper

Plant Operations Notebook, N-95-00-00.5

This undated notebook was used by Edison, possibly in 1900; however, it may have been used as early as 1895. It contains an enumerated list of notes regarding problems observed at the Ogden plant and an unidentified drawing. The pages are unnumbered. Only 8 pages have been used.

No 1 Cannot get the corliss frame in

2 Cannot get flywheels in

3rd No provision in building for Condenser

4th How about taking water pipe in an out

5 No provision for taking care of the 7" stuff thrown from elevator buckets

6th. No provision for taking care of stuff not thrown out by buckets

7. No provision at bottom of elevator to insure perfect delivery to buckets or take care of spilled ore. or warning when pilled up.

8 No way to warn crane man that 7" bin is full - pile up and raise h-l with intermediate

9 No way to stop roller feed without stopping whole mill.

10 Rubber belt under dryer will receive too much heat not from ore say but from walls - burn -

11 No provision on belt ways structure to put turning up pulley studs

12 Swaying torque of rope drive on top of dryer jar building dreadfully same trouble occurred Mill. 1.

13 No wind pipes shown from small blower to furnace.

14 Is there enough fire room to work long slice bars

15 Top arch too low in furnace soon burn out.

16 No means shown for operating top lid on stack from fire room.

17 No provision for taking away ashes

18 No provision for taking out dust at bends etc of exhaust pipes—

19 - No device for sealing the ends of bars in dryer.

20 No device shown for keeping water out of pits—

21 Floor too close to dryer—nonsence—

22

23 Belt under stock house has 3 turns on too long will run up sides of crowning pulleys and spill ors

24 Nothing shown preventing air Entering dryer with the ore.

25 Down take + Exhaust pipe soon worn out by cutting action of dust no provision for renewing easily — Contemplated pipe too thin.

26 Exhaust blower contemplated inconvenient for renewing blades, case etc

27 Continuous action of the violent knocks of 7" + 3" ore on rolls loosen them from friction bits on I beams

28 Nothing to prevent swaying of Elevators, This swaying Torque will pull anything to pieces in time —

29 - No exhaust pipe for Corliss in Case Condenser gives out

30 - How can a rigging be put in that will handle Corliss parts Expeditiously.

31 Contemplated choker at bottom dryer will soon get blocked up from stray pieces etc, weight of ore accumulated to certain extent should act to open Something

32 Bolt trap not shown

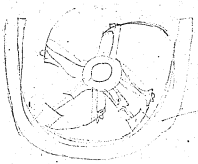
33- platform for sorting to find bolt too long

34- Screening trough from 7" roll too complicated

35 Screens holders all to heavy Cant be rapidly changed for new ones

36 = a 24" belt to convey coal to furnace is absurdly too large

37 =


steam

Plant Operations Notebook, N-95-05-01

This notebook covers the period May-September 1900. The book was used by Edison and an unidentified author for notes and calculations regarding production stoppages at the Ogden works. The pages are unnumbered. Approximately 120 pages have been used.

55 days including sundays
lost from May 1st to Sept 15th
of the 85 days run
average hours run each day
5.87 Hours —

138 days running time,
4.12 Hours —

1385

840
253
138) 5.87 (850 / 42) 1385min
552
35

May	June	July	Aug	Sept
1	1		1	
2	2		2	
3	3		3	
4	4		4	
5	5		5	
6	6		6	
7	7		7	
8	8		8	
9	9		9	
10	10		10	
11	11		11	
12	12		12	
13	13		13	
14	14		14	
15	15		15	
16	16		16	
17	17		17	
18	18		18	
19	19		19	
20	20		20	
21	21		21	
22	22		22	
23	23		23	
24	24		24	
25	25		25	
26	26		26	
27	27		27	
28	28		28	
29	29		29	
30	30		30	
31	31		31	

84 days worked

lost in stoppages on running day 25.3 days 600 minutes each

No 1 Jackshaft
Hooking main belt to Engine - 8 - $ $ -
main belt from Engine pulled apart - 75 $ $
Hot Bearing - 83 -

It is strange this belt pulled apart
was it unhooks or did it have a splice
= there is very little power on this belt

166 minutes

Dynamos on Crushing Plant

Belt broken on Dynamo - 5s

New cylinder ahead for this

Why cant oil pipe be connected back to oil point but overflow

New Cylinder for this

Corliss Engine & Steam pipes

Steam valve broken 271 = 265 — 245 —

Broke down 93 — 15 — 22 —

No Engineer 32 —

No oil 6 —

No steam 10 — 13 — 26 — 16 — 10 — 15 — 12 — 15 —

Oil tank overflowed 12 —

Key loose in valve stem 5 —

Belt brake — 150 —

~~Steam~~ pipe — pulling in T in oil system — 42

Cleaning Eng — 4 —

1279 minutes

No 2 Corliss Jackshaft

Drive belt Engine to Jack E side off 160 —

Hooks broke on main drive from Engine to Jackshaft W side 50 —

Hooking belt to 3 Counter from No 2 = 130
Splice pulled out 140

Running slow belt to 3 Counter run to one side 400 —

Belt running to one side — 5

Lagging off belt tightener. Shut down for day at 6.55

Hook bust to jack W side, hooks broke 65 -

950 minutes

Intermediate jackshaft drive

Intermediate roll
Blocked – 15 – 7 – 18 – 25 – 21 – 14 – 2 – 5
107 =

Friction slipped 3 – 3 –

Hooking belts 47 =
Drive belt broke in canvas splice 58

Bearing hot 106 – Side cause by
Thrust bearing getting hot 106 –

Friction band broken 94 –

Friction bands wore off when starting up
Chase removed them unnecessarily 2 –

Running on roll drive belt 5 –

Hopper blocked – caused by chain of
roller feed – 27

Jagging off Drive pulley 1 Counter 8 – 7
Changing plates – 570 – 10 –

Fixing bearing 560 & 380 –

2 0 0 5 – minutes

Giant Roll

Blocked 8 - 17 - 20 - 17 - 7 - 18 - 8 - 10 -
5 - 12 - 12 - 6 - 14 - 7 - 20 -
181 -

Bridged 15 - 10 - 14 - 10 - 22 - 10 -

262 minutes

Giant Roll feed

Running on drive belt — 6
Drive belt pulley apart = 15 —
Rubbing hand on wood — 30 —
Out to lear 15 —

66 minutes

Elevator No 1 Roller Feed

Chain broken 20 — 15 —

out of order 60 — 27 —

Blocked in chute blocked rolls — 11 —

133 minutes

Crane No 1

No record kept as one Crane
Kept plant Crushing
Cranes worn out several times
Trolly was broke twice

Crane No 2

Elevator No 1

Tightening clamps slipped — 10 — 10 — 95 — 320 — 20 — 60 —

Pinion shaft moved 15 —

Clutch top Elev and rolls machinery running hot - 10 —

Bearings broken on pinion shaft shaft bent 440 —

Bucket slipped — 30 — 30 — 27 —

setting head drums 320 —

friction slipped on clutch 7

Hot bearing 48 — 30 —

Sheared* 18 — 15*3

Loaded too heavy to start friction clutch slipped bad shape — 82 = 40 — 102+

1730 minutes

* Engine broke

+ working for main shaft friction clutch

*3 = rock got in bet wern bucket & chute =

No 3. Countershaft —

1st 36 Rolls

Friction slipped 6 – 4 – 2 – 10 – 4 – 3 – 9 – 8 – 15 –
8 – 18 – 18 – 15 – 15 – 18 – 20 – 30 – 6 – 34 –
32 – 53 *3 13 – 12 – 11 – 10 – 21 – 12 – 6 – 7
Blocked 7 – 18 – 21 – 10 – 25 – 6 – 15 – 6 –
13 – 10 – 5 – 15 – 35 – 44 – 20 – 21 –
35 – 10 – 2 * – 13 – 43 – 45 – 27 – 32 – 13 – 27
Blowed up 3 – 3 – 2 – 2
Carpenters wedge on hopper 8 –
Changing plate bolt 10 –
Drive belt broke 50 – 35 – 30 – 24 – 30 –

Tightening bolts in extension 25 –
Tightening frictions 4 – 10 – 8 –

Extension cleaned – 72 –
Blocked by chute coming loose 5 –
Roll wrenched out of pl. new plate striking check plate 18 –
Hot bearing – 10 –
Ropes broke in Elevator – several days
Changing Drive belt – 70 –
Friction broken 43 –
Looking for brake plate bolt – 8 –
Bolt broke – 34 – 40 –

Tightening bolts in plates – 18 –
Wiping bolts in extension – 5 –

1484 [illegible]

* rocks left in by night men –
*2 plate in chute underneath dropping down
*3 - caused by wood from under 1st 36 –
blocked up from 1st 36 –
* same as above –

Night men neglected tighten friction

* shut down for the night

2nd 36 Rolls

Shaft worked out sprocket of roller feed 110 —

Hopper ~~settled~~ dummied 62 —

Blocked by overflow from 1st 36 = 6 —

Cleaning out 6 — 10*

* block wood left in by night men

188 minutes

Rein

* bolt broke from 1st 36 Rolls

*2 sheared by bolt out Intermediate plate

*3 " " " "

*4 = no belt tightener

24" Rolls –

Tightening bolts 67

Blocked 17 = 60 – 19

Pulley broken on Tightener 18 –

Cap broken and worker gear shaft 124

Teeth broken in gears so shut down for night

9 = 8 – 6 – 12 –

Sheared 13 – 5 – 10 – 9 – 9 – 18 – 20 – 10

6 – 10 – 15 – 9 – 7 – 9 – 7 – 20 *2 = 6 = 41 *3 10 *4

Waiting for bolts in plates to be tightened 25 – 32

Cars stripped 30 – cleaned at 6 pm

Nut from 1st 36 sheared rolls 20

Cap broken on pinion bearing caused by Machinist leaving nuts in hopper 100 –

Gear teeth broken 135 & 227 – 145 –

155 –

Putting 24 rolls together 235 =

Drive belt broken 1 hook 30 – 1708 minutes

No 1 Conveyor

Elevator 2

Minute top Elev. strike bucket 62 –

Tightening drive belt 48 –

Cleared 19 – 12 – *9 – *8 – *10 – 8 – 5 – 18 – 5 –

Drive belt broken 42 –

* Engine running backward
" "

246 minutes

*20" loss due to burning no 6" 6-ply B

Dryer No 1

Sprocket chain on shaker off 3 — 4 — 44 —
5 — 36 — 33 —

Hooking Shaker drive belt 41 —

Drive belt from 5 Counter to shaker broken in
Canvas splice — 32 —

Blocked 27 — 95 — 41 — 70 —

Cross belt broken during shaker * 35 —

Waiting for heat 13 — 10 —

Dryer Screens blocked — 17

sprocket chain broken — 12

Changing drive on shaker sprocket 160 —

Belt off Counter left shaker 18

696 minutes

1 ½ Conveyor Picking belt

Cross belt torn apart — 10

10 minutes

Blower top Dryer

No 2 Conveyor
overloaded - belt slipped - 10 -
pulling on wrong belt - 7

17 minutes

Didnt run all day = didnt have it ready monday

No 3 Elevator

New bucket broken 40 —

~~4~~ Pinion shaft broken 550 —

Fixing pinion shaft following monday 240

830 minutes

245 minutes ended 6 pm

No 3 Conveyor –

Off track 175 – 33 – 40 – 245 – 10 = 12
6 –

Putting wheels on 5 – 6 – 2 = 8 –

Bait brake in guard rail – 22 –

Jumped tooth – 120 – 45 – 17 –

Bolts broken in buckets 34 – 6 – 11

putting bucket in 48

putting bolts in buckets 15

Changing over to 3 Con 98 –
Belt out 4 –

Throwing out Driven for 7 – 6 – 10 – 10 – 11 –

Sheared – caused gate off hopper got fast
Tail opht – 15 – Sheared 10 –

Outorder 186

1219 minutes

Countenothafl in Dryer

Fan end No 1 Clock House

Running alone putting on fan belts 1 silk House 35 –

35 Minutes

Angle Shaft

Drum pulley on shaft drawing 7 Con
Lesson 14 —

Drive belt from angle shaft to #5
pulled a print — 31 —

45 minutes

Waiting for Speed

10	2	2	3	5	2	5	3	3	2	3
2	2	18	5	3	3	5	4	3	2	3
6	10	26	2	5	3	4	3	3	3	3
3	3		3	4	3	5	3	3	3	3
3	1	13	5	3	3	3	3	3	3	3
3	2	5	2	3	3	3	2	4	3	3
1	4	42	5	3	3	3	2	3	3	3
3	1	4	3	3	4	3	3	3	3	2
5	2	5	6	2	4	2	3	2	4	3
4	4	6	7	4	3	3	2	3	3	3
2	2	5	7	4	5	3	3	3	3	3
2	15	5	10	4	3	2	3	2	3	3
1	5	4	3	3	6	4	5	20	3	2
4	2		4	2	6	5	3	3	4	3
1	5	10	3	4	5	2	2	2	3	3
4	11	4	5	3	2	5	3	2	3	
2	3	3	5	2	3	3	3	3	4	
2	4	2	2	3	3	2	2	3	3	
1	7	2	7	2	3	3	3	4	3	
2	4	3	5	4	3	3	3	3	2	
2	5	3	4	4	5	3	3	3	2	
1	5	2	5	4	4	12	3	3	3	
2	5	2	3	5	16	4	3	3	3	
2	4	2	2	7	3	4	5	3	3	
1	8	5	2	3	2	3	3	3	3	
1	5	2	3		3	3	3	2	3	
3	3	2	3			3	3	3	3	
			5			4	3	3		

X shovel broken —

Waiting for ore 19
16

4		
2	100	30
60	86	20
42	7	15
15	26	10
14	12	25
34	17	15
35	30	196
21	150 *	10
66	60	35
39	40	10
52	55	
11	65	1942
32	15	
32		
94	18	
14	27	
35	25	
30	20	
45	8	
15	15	
8	10	
35	10	
4	10	
15		

1942 Minutes

Signal bells out order - 7 -

Mann Drive Gelt from No 2 to No 3
Counter

Hooking '65 =

65 Minutes

Big rope drive

Small rope drive E side

Putting on 10 –

Brake 23 – 15 –

48 minutes

No 1 Stock House

Stock house full at Tail end 3 Cwt 50—

Stock house full up to chute 28—·65—

Miscellaneous

Clipped to fend twalls from Vulcan above 9—

Waiting for Well 1 — 14 — 60 — 50 — 95 — 8 — 71 — 170 — 20 — 620 — 50 — 22 — 13

Waiting for machine shop 66

1193 minutes

Mill #1

French Engine

Waiting 325-20-10
Running slow speed. 75-

Waiting for start 105-
" " speed 15-5
Tightening up nut 5-8-10-10
Bolt loose 2-
Tightening up nut 5-
Out of order 5-10-90-8-15
5-15

Belt run off. 80-110-
Lost vacuum 10-
Water pipe 5-
On Center 15-20
Nut loose in crosshead 10
Putting rivets in Drive Belt 45-

Valve out of order 70-

Lost oil cup. 55-10-5

Inspecting Belt splice giving out 5

French Engine Continued -

Belt slipped 5

Planed down rocker arm 1st 14 m. Belt too large for wobbler 90

Out 10

Tightening up crosshead 5

Bell out of order 30 -

3/8 mm

No 4 Elev.

Tracking 20 -
Oil casing rubbing gear 55 -
Sheared 15 - 25

Turning to try new bucket 40

Broke teeth on motive gear 260

Sheared 10

4/25

1st 14 Mesh Rolls

Brake check blocked & HR hopper 65.-
Hot bearing -60-10
Running slow apin & HG. Roll. bearing running warm. 20 —
× Changing over to other & HG R. 20-30-5-50
Hot bearing 14x50 M. & HG R. 180.-
Filling hopper 14 M " 40-

Tying 14 M & HG. Rolls. 20-20
× Changing over -45-65

Gate missing on hopper 30

Broken wobbler & changing over 30-

Not ready-45

Dust guard broke & pulled apin out of gear 105

Belt broke new wobbler 35-90

Teeth loose in bevel gear drive -205

Sheared new wobbler 30

1st 14 M Rolls continued

Sheared - 40 - 105 - 130 - 90 - 25 - 25

Fitting Countershaft - 100

McIntosh Engine

Waiting for speed 40 - 40 - 15

On Center 20 - 20 - 10 - 15 - 20 - 70 -

x Hot pin 35 - 90 - 60 - 60 - 100 - 160 - 460 - 40

Out of order 135 -

Coupling up to main shaft. 15 - 40 - 10

Waiting - 135 - 190

Brake Drum - 270 - 600 600 600 600 600

Governor Brake 105 - 320 -

~~Pipe blown 600~~

Nut loose 5 - 5

x Hot pin 155 - 10

Hot bearing main shaft 50

Valve out of order 10 -

Brake valve etc 145 -

#6 Elev.

Hock ran to one side caught fast
and bent buckets 105 —
the same — 10 —
Taking channel from frame 300 —
changing guide pulleys &
packing bearing. 105 —
Sheaves 20 —
Waiting for air & cleaning out tail end 15 —
Running load off bottom 60

615

#7 Conveyor

Fixing leak inside 55-

Teeth came out Motive gear drive 20

4/55

4 & 5 Conveyor

Cleaned - 10-5 - 15-25
Belt slipped on head pulley 30 -
clutch slipped 40 -
Stalled 45 - . Fixing blocked
Idlers underside of Belt 165 -

Waiting for man at head 25 -

Belt slipped - 25 - 600

Door stalled 20

4 & 5

2nd 14 Mesh Roll

Changing over 10-30-90
Bursted oil pipe 50-
Splice pulled out Ropes 50-

Rope off shears 15-

Rubber flaps wearing off gate 40-

Grinding returns 15-
putting in Wobbler 600
Not ready 15-40

Hot Bearing { Middle S. side / Bottom N. side -80-320-50
110-40-100-320-30-30-100-65-60-165
75-320

Fitting oil pipes 40-240-20

Dust guard dropped off N end middle roll-70-75-35

Sheared 20-25-15-75-60-45-30-45

Waiting for 560
Putting Belts 60-515

2d 14 M Rolls Continued

Patching Hopper-15

Drip pipe blocked 60

Pipe broke 60

Fitting up. 10

Fixing #1 hopper 85

1260

2d 50 Mesh Roll

No Oil 2d end bearing bottom south side 65—

Rope jumped off 3 Hgm sheave 5-10

Splice pulled out 3 hg. roll rope 135—20

Changing over 15—30—

New wobbler out of order-90-30

Hot Bearing S side 135

Hot bearing 600.

" 600

535

#21 Flight Conveyor

Jumped the track. 970-10
Climbs track 25—

Carpenters stalled fixing doorway 20

Running on drive belt -10

Stalled 80-15

5/10

#19 Conveyor

Tipping delivery tail 40-
Hot bearing on motor driver 70-
Motor driving #19 Con out of ord. 30-
-25

Stalled 25-

#19 x 30 Con stalled 10-30-N-10

Bolt broke in split gear on #19 Con
motor & broke teeth 35-

#19 Con Motor stalled 20-15-25

Bolts break in gears #19 Con Motor
& dropped down in oil casing 70

#29 Conveyor

Stalled 40 – (belt slack) 20 –
60 –

12" Magnets

Max short .10 –

1st 50 Mesh Rolls.
Broken pipe 15-10
" oil pipe 20-
Rope jumped off 20-
Changing over. 10-35

Waiting for man 100-20
Main oil pipe leaking 40-
Breaking in new man 50-
Putting wobbler on 170-

Hot Bearing 135-55

Filing out Pipe 15-

Block of wood in delivery + blocked rolls 30

Sheared-25-40-15
Hot Bearing 600.
Working on-65-620

Waiting for machinist to put dust cap on 70

Wobbler broke 380-
Fitting up 15

#26 Conveyor

Running on drive 10 –

4" Magnet.

Sprocket chain jumped off roll feed - 10 — 5 -

Waiting for current - 10 5 -

Belt driving roll feed run off - 15

#5 Elevator

Shearing plate slipped out 20—

Delivery blocked 15-15

Broke tooth in Mortise gear 300-125

Drive belt slipped 30-

511

#12 Conveyor

Stalled 25—

" main tunneling #2 Dry 25—

#16 Conveyor

Changing belt 120-

#2 Dryer

Emptying out. 25-

Gear teeth cut on Angle shaft
drive to #2 Dryer. 25-

Main bottom gate got fast Couldn't
pull it out. 15-

Waiting for man 20.

Splice pulled out of Rope drive 200

Blocked from bottom gate up 40

Gear teeth broke on angle shaft
drive to #2 Dryer 160-

Roller fied bolts off top. 10

Miscellaneous

Man over 3 H & R floor canvas caught between collar & bearing set on fire 10-
No juice Eng broke power loads 170-
* No Ord 15-155-10-80-10-50-65-95-46-320
Wrong signals 10
Breaking in new men 85-190-40-20-70-40-170-70-115-100
Man in hand House rattled 5-
Running load off 5-5-15-15

Running slow speed 10-10-20
* Waiting for speed 10-15-10-10-10-10-10-10-25-10-15-10-5-10-15-5-5-5-10-10-10-5-5
Putting in roll clutch & running on drive belts 10-
* No Ord -15-370-300-75-120-240-125-80-110-100-300-135-90-50-50-110-65-40
Waiting for men 30-
Heavy rope driving Send #1 mill slipped 25-
* Waiting for speed -15-5-10-10-5-15-30-10-10-10-10-5-15-15-15-15-15-10-15-15-10-5-5-20-5-10-10-10-10-5-5-10-5-5-20-10-5-5-10-10-5-10-10-20-10-10-15-5-10
Man in magnets pushed wrong button 5-
Waiting for Pipe fitters to finish job
Man in H & R 105

Miscellaneous Continued

Waiting for Steam 20

Ripped logging on pulley drive N. End #1 Mill 65

No Oil 60

Some one monkeying with belts 15

Waiting for shearing bolts 65

#19 + 30 motors stalled 10-10-40-20-

Logging off pulley dynamo power Loc-10

Waiting for air-10-130

Taking out slack in sprocket chain driving #14 + 27 Gin 120

Waiting for current-15-15

Stolen cleaner pulley & bolts 10

Waiting for Power House 10 -

Miscellaneous Continued

Waiting for Sand house changing mixers 20

Running on belt 10

Hot box in Power House 45-

Logging down off #32 Dy namo Power House 30-

Breaking in new oiler 25

Running load of Mill #1 30

Cleaning Mill 570 -

Brake gear on blower floor 600

6V1.0

Corliss Eng. #2

Firing dash pot 18 –

Sand House motors stalled #1 Co Eng blowed down steam not turned on main valve 25 –

Bolt out 110 –

#17 Conveyor

Stalled + pulled belt into 95—

Stalled 50-

Blower floor

Broke reversing gear 1.70 – Belts south end mill slipped. taking up belts for same 1.20 –

Main drive air line Shaft Blower Floor slipped across belt. 1.25 –

Main drives on Blower floor slipped sprocket chain jumped off (wedged) threw belt off # Mag # 3 Bank 1.0 –

Main drive belt slipped 1.10 –

#25 Conveyor.

Running on drive 15—
Rope broke on belt tightener #25 Conveyor
shut down mill + oil pipe broke on M
high gear roll 35—

Fixing delivery 10—

#6 Conveyor

#6 Con (Stalled) Hot bearing balance roll
S. side 1st 5T M 3 hp roll 225—

Cleaning out tail end 5-30-10

Belt ripped 5-30-15

Broken turnup pulley End #6 Con 15

Stalled 150-25

#22 Conveyor

Belt slipped 10.-

Jackshaft 3 H.G. Roll Drive
Key taken out & nut put back
into place 45

Broke belt tightener 235-

36' Belt strikes foundation on
bottom side 25-170-

Hot box 80

#1 Conveyor

Ripped piece out of belt 15-110

10 1/2 Conveyor

Wheel off taken off by inspector
forgotten 20

Running on drums 20 1/2 + 18 1/2 Con 18 –

35

90 Conveyor
Motor driving #30 Con stuck 10-

Waiting for oil cup head #30 Con Motor 90

#2 Belt Magnet.

Run to one side totalled 50 -

Tightening clutch 5 -

Clutch slipped 30

#15 Conveyor
Pulled splice apart 20

Teeth came out mortise gear dim. 135

15

8" Magnet.
Broke shaft driving roller feed-180-

Water Engine

Piping Crank No.

#31 Conveyor

Nailed -30-

Hooking belt 45

#9 Conveyor

Running in drive -15-

Pucker

* Foreman quit
** Splicing main belt
Ø Friction brake shoes not set up right.

Miscellaneous

Waiting for Dairy Patch 420 (420)

Waiting for Speed 5-5-30-8-4-5-5-5-5-5-10-5-10-5-5-10-6-10-15-30-15 (198)

Getting heat in ovens 20-20-15-30-20-30-15-30-110-30-40-44 (404)

Steam down 10-15-10-8-10-15-10-15-40-18-5-5-5-10-12-5-10-10-8-10-5-8-5-5-15-30-30-10-20-40-5-20-10-15-140*-5-5-10-20-40-40-15-5-5-30-30-5-2-5-25-3-5-5-5-3-3-4-3-3-5-4 (809)

Cleaning out mixers 15-10-15-20-100-17-20-22-26-15-20-30-20-30-20-20-20-20-20-16-18-20-15-17-20-20-15 (658)

Gasket blew out of main steam line-75-215-5-140-40 (558)

Waiting for water 140-15 (155)

Ø

Tightening friction clutch Drive-10-20-16-12-15 (527)

No Oil-10 (10)

Clutch out Mixers 10

Running main belt-10

Miscellaneous

Waiting for Muck - 12-5-90 × * (215)

Fastening Keys on mortise gears driving Mixers - Keys got loose 10

Machinist working on #11 Bracken let cart-out + wheel get in 47 Qt + threw it off track 45

Getting men to put on oil cups 10

Running mixers without feed 5

No room for cars on R.R. track 360

Tooth broken in mortise gear driving mixers 5

Some one tampering with signal button 3

Canvas splice pulled apart in force blower 10-9 (19)

(470)

× Steam shut off during the night.
* Foreman let steam down + pipes got cold.

x Tightening up.

A & S. Engine

Babbit metal melted on Crank Pin 30

On Center 10

Fixing Governor 1-25-30

Key out connecting rod 90-10

Main Line Shaft.

Coupling up... 15-

x Every time belts were put in.

#1 Mixer

Moving collars on main shaft & putting spring in spreader-50

Coupling up to run N. Fed N.

Cleaned 30-30-60-30

WT

#3 Mixer

Sheared -10-10-5-20-10-10-15-10-10-15
30-10-10-5-10-10-20-10-30

Belt broke which broke 5 plows + 1 Spreader
4

Tightening Belt 5

8 Elev.

Tightening Bolts 6.0 Revisted now

Chutes blocked Mixture too hot + wet + would not run down chutes - 3.0

Cleaning chutes to 4/4 + 5 Com - 3.0

Bucket broken - 3.0

#3 Stock House

Main Drive belt off: 25

x caused by mancatching chain block-pl
* 4 times at tail-end

#2 Mixer

Coupling up & connecting pipe #1 Mud Kettle 30
Chgd 10-25-65

96½ Conveyor

Installed - 5-35

Tail pulley fast 3-5

Little McEng

Hot cross head .5

Screw loose .25

Belt pulled apart .50

#3 Dryer

Waiting for heat. 10:35

Experimenting with fan at top 650

Changing Spreader at chute top 7

Screens block top -10-8-4-5-5-7-5-9

× Rim
✱ Nut would not go
Ø wire rope replaced

Rope drive to Breaker
shipped 35-82 × -40 ✱ -45 Ø -25

Putting manilla rope in grooves of sheave wheel driving Breaker 1.60-

Running on Rope drive 20-15

#7 Elev.

Blocked - 10-15

2 Buckets broke off caused by overload
7-5-

Italian lit board drop in #7 Elev &
broke off bucket - 12

95 Conveyor

Off track 10"

96 Conveyor

Rope broke 340

Repairing 270

Broken repairing same 46.

101 Conveyor

One feed man overloaded & caused main drive belt to slip & taking up. 78

#41 Conveyor

- Making change 650-

NEW JERSEY AND PENNSYLVANIA CONCENTRATING WORKS

PLANT OPERATIONS

POCKET NOTEBOOKS

Plant Operations Notebook, PN-97-00-00.2

This pocket notebook was used by Edison, probably in 1898, primarily for calculations relating to Ogden operations. Included are calculations regarding costs, depreciation, profits, and losses, as well as financial obligations and resources. The book also contains some calculations that seem related to the production capacity of the Ogden works. In addition, there are notes and calculations regarding the Ortiz gold mine and a list of various types of mills. The pages are unnumbered. Approximately 70 pages have been used. The book has been filmed at a reduction ratio of 10:1.

One Shift

285
280 Hard

Coal.

Dryer No 1	5 tons	11.65	14	00
" No 2	2 "	4.65	5	60
" No 3	1	2.33	2	80
15 ovens	15 tons	20.60	44	80
Babcock	10 "	18.50	28	50
Climax PH	14 tons	46.44	38	50
Climax Bkr	6 "	15.00	16	50
Vulcan & Victor	4 "	10.60	11	00
Locomotives	2 "	5.30	5	50
Dam wood equivalent	2 tons		5	50
			139	77
Blacksmith 2.65 5.65		147	172	80
Oil waste etc			20	00

[illegible] 20 tons [illegible]

Power plant Day shift		
2 firemen	3	25
1 Engineer	2	50
1 Dynamo Tender	1	50
1 Indicator	1	25
1 General electrician	3	00
2 day asst "	3	00
1 Repairer	1	50
	16	00

1 fireman 1 Engr 1 Elec

Power Plant Night shift		
2 firemen	3	25
1 Engineer	2	50
1 Dynamo Tender	1	50
1 Indicator	1	25
2 Night Electricians	3	50
	12	00

Crushing plant day shift			
1	Dynamo tender 1.00	1	25
1	Engineer 2.00	3	00
4	Chainers	5	00
2	Top men	2	75
1	Giant + Int. 1.35	1	35
1	Roller feed 1.35	1	35
1	Bottom Elev 1	1	25
3	Small roll 3.75	4	20
2	Crane 3.50	3	50
1	Dryer furnace 1.50	1	50
1	" asst	1	25
1	" Fireman 1.50	1	75
1	Conveyor 3	1	75
1	1+2 Conveyor 1.35	1	40
1	Cleaner	1	25
1	Foreman	2	50
1	Manager 2.50	4	00
		39	05

Crushing Plant Night shift			
1	Dynamo tender	1	25
1	Engineer	3	00
4	Chainers	4	00
2	Top men	2	75
1	Giant + Int.	1	35
1	Roller feed	1	35
1	Bottom Elev 1	1	25
3	Small rolls	4	20
2	Crane	3	50
1	Dryer slack	1	50
1	" " asst	1	25
1	" Foreman	1	75
1	Conveyor 3	1	75
1	1+2 Conveyor	1	40
1	Cleaner	1	25
1	Foreman	2	50
		35	05

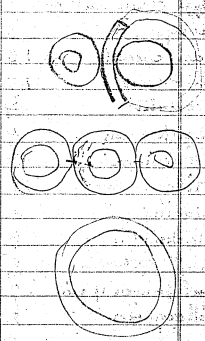
Mill 1 Day shift		
Supt	5	00
Foreman	3	00
Under stock house	1	25
Runway 4+5	1	25
Top 4+5	1	75
Underneath floor	1	60
2 3 High men	3	20
Pit	1	60
Middle Mill	1	60
Southern	1	60
Top Dryer 2	1	50
Dryer fireman	1	35
14 mesh screens	1	75
14 " magnets	1	60
Top Elevator 4+5	1	60
Over 8" magnets	1	50
8" magnets	1	75
4 "	2	00
Belt machine	1	60
Blower floor	1	60
Sand house	1	50
Stockhouse 2	1	50
2 cleaners	2	70
Boy	1	00
Oiler	1	50
2 firemen	3	25
1 Coal passer	1	25
2 Engineers	6	00
	56	80

Night Shift Mill 1	
Same less Supt,	51,80

Briquetting Plant day shift		
Supt.	4	10
Foreman	2	50
B line	1	25
Dryer	1	25
Mixer Kettles	1	50
" Watcher	1	25
2 firemen ovens	3	00
2 Under Brickers	2	50
2 Muck house	2	75
2 Loading	2	60
1 No 3 Slackt belts	1	25
1 Oiler	1	35
1 Engineer	3	00
1 Climax fireman	1	75
6 Bricker tenders	7	50
1 Repair Machinist	2	25
2 cleaners	2	50
1 Thermometer	1	25
1 Aero boiler man	1	35
	44	80

Night shift same except
4.10 less for Supt.

40.80



Mining — Day shift

Mine supt	4	00
" " assistant (night)	3	00
Surveyor	3	00
Vulcan crew	16	25
Victor crew	17	25
3 Locomotive	4	80
3 Brakesmen	4	50
2 Trimmers	2	50
12 Drillers	21	00
2 Loading	2	50
2 Blacksmiths	4	00
2 " Helpers	2	50
1 Genl foreman 4 men	7	50
2 Drill carriers	2	50
	95	30
12 night drillers until the Loco are put on drills	15	00

Mining night shift

Vulcan crew	16	25
Victor "	17	25
3 Locos	4	80
3 Brakesmen	4	50
2 Trimmers	4	50
12 Drillers	21	00
2 Loaders	2	50
2 Blacksmiths	4	00
2 " Helpers	2	50
2 Drill carriers	2	50
	79	80

General — Day shift

1 Oil house	1	35
1 Yard foreman	2	50
8 " men	10	00
2 Storeroom	3	25
1 Chief Clerk	4	00
1 " " asst	1	75
4 Clerks	9	00
1 Draughtsman	4	00
~~8~~ 5 Carpenters	11	25
1 Carpenter foreman	3	00
12 machinists	27	00
4 Boys	4	00
4 Helpers	5	00
1 Stable	1	50
3 Carts	3	75
1 Steam fitter	2	50
1 Chief Engineer	5	00

Master Mechanic	5	00
Asst Supt	6	00
Dam Engineer	1	75
Boss foreman	3	00
1 Muzzle man	1	25
3 assay	3	25
3 Blacksmith	4	00
2 " Helpers	2	50
2 Boys	2	00
1 Machine shop foreman	3	00
	130	60

General Night shift

1 oil	1	35	2 Boys	2	00
1 Yard foreman	2	50		59	85
5 " men	6	25			
2 Store	2	75			
1 Night clerk	2	00			
3 Watchmen	4	50			
3 Carpenters	6	75			
8 Machinists	10	00			
3 Machinist helpers	3	75			
3 " boys	3	00			
Night Machine foreman	3	00			
1 Steam fitter	2	50			
1 Dam Engr	1	75			
1 Muzzle man	1	25			
3 assay	3	25			
1 Blacksmith	2	00			
1 " Helper	1	25			

Day shift

Fuel etc	140	192	80
Power Plant		16	00
Crushing Plant.		39	05
Mill No 1		56	80
Briquetting.		44	90
Mining	110	95	30
General.	3	130	60
		575	45
		36	

Correct Oct. 1. 539

540 when ok Gulf -

18 pick and 4 Carpenter 8 helpers

30 strippers will be on for

overtime -

or 1/100, day Extra

Total 639. wages included

Night shift

Fuel	192	80
Power	12	00
Crushing plant	35	05
Mill 1	51	80
Briquetting	40	80
Mining	79	80
General.	59	85
	472	10

Expense 639 -

200 tons - cost		384
250 " "		320
275		297
300		278
325		261
350		247
375		235
400		224
425		214
450		206

Power 9,500 / 1,200 / 3,000

16.5 ore 15.5 net.

Basis 4.4 long tons per ton of 68% Concentrate.

Cost muck per crude ton 3163		4.4 c
" Dynamite	2	1.8 c
" Wear plates		3.0
" Other wear		2.0
" General wear		4.0
1463		15.2

per ton crude

Corrected Oct 1 64.3

66.8 cents added to each ton 68% Concentrate

one shift	Cons
1000 Tons 4.4	227
1500 "	340
2000 "	454
2500 "	567.
Yearly 300 days	
1000.	68 100
1500	102 000
2000	136 200
2500	170 100

Night & day shifts	
1000	227
1500	340
2000	454
2500	567
3000	681
3500	794
4000	908
4500	1021
5000	1135

Yearly	
1000	68100
1500	102000
2000	136200
2500	170400
3000	204300
3500	238350
4000	272400
4500	306000
5000	340000

Yearly Expense one shift

300 days $172.500

Yearly Expense both shifts

$314.265

to which must be added 66.8 Cents for every ton of concentrate briquetted.

1 shift 6c unit

1000 Crude 68100 Conc c

Cost	217	990
Receivs at 6c delivd less freight	230	178
(1/2%) Profit	12	188

1500 Crude 102000 Conc

Cost	240	990
Receivs	344	760
Profit	103	770

(4%)

2000 Crude 136000 C

Cost	263	460
Receivs	527	680
Profit	264	220

(10 1/2%)

2 shifts

1000	Cost	359	689
	Receivs	230	178
	Loss	129	511
1500	Cost	382	489
		344	760
	Loss	37	729
2000	Cost	405	113
	Receivs	459	680
	profit	54	567
(2%)			
2500	Cost	427	713
	Receivs	574	600
	Profit	146	887

(6%)

3000	Cost	450 000
	Recevin	689 520
9½%	Profit -	237 520
3500	Cost	472 000
	Recevin	804 440
13¼%		332 000
4000 -	Cost	495 000
		919 360
17%	profit	424 360
4500	Cost	516 500
		1034 280
20¾%		517 780
5000	Cost	540 000
		1149 000
24%	Profit -	609 000

7 shift 5c unit

1000 crude	Loss	33990
1500 "	Profit	34 410
2000 "	"	171 440

2 shifts - 5c

1000 ton	Loss	175 000
1500	"	107 000
2000	"	38 000
2500	profit	32 000
3000	"	101 000
3500	"	171 000
4000	"	240 000
4500	"	310 000
5000	"	378 000

from profit. There must be charged $54 000 for general charges and 13 000 for overall expenses in mills + mines and for repairs.

4.5 Cents unit

2 shift

1000 tons	loss	198 000
1500	"	142 000
2000	"	85 000
2500	"	26 000
3000	Profit	54 000
3500	"	89 000
4000	"	146 000
4500	"	206 000
5000	"	268 000

2 shift 6.5 unit.

1000	loss	106 000
1500	"	3 000
2000	Profit	100 000
2500	"	203 000
3000	"	310 000
3500	"	412 000
4000	"	516 000
4500	"	622 000
5000		724 000

Year	Cost	Profit at 6¢	Profit at 7¢
1906	1,007,000	1,037,000	935,000
1907	1,144,000	801,000	1,144,000
1908	1,260,000	963,000	1,335,000
1909	1,385,000	1,116,000	1,532,000
1910	1,572,000	1,270,000	1,834,000

See about 2 foot under new bracket

Cripple Creek

200 Ton mill 200,000

47¢ for mining + Crushing 40 mesh,

based on 7¢ strong wages

	Second
Chaining	30
Hoisting	19
Running in	10.6
Lowering in Cradle.	8.5
Dumping-	
Roll feed empty	3
getting out Cradle	10
Return-lowering	43
	123.

for 2 shovels Locos etc
Loads for 2000 tons including
Drilling powder Coal &
depend $1.35.000 — 2 shifts
This is for Taking out 2000
tons Hoppers in 2 ½ hours
it would make over 4000
tons about 60% more

25 ~~[illegible]~~

26 Extension sand Conveyor

A27 Old Casing gears 21 Conveyor

28 ~~[illegible]~~

B29 Brace tops 4" mag frames

D30 ~~Secure [illegible]~~

31 ~~Aux pump [illegible]~~

~~Dump [illegible]~~

32 Stringer clutch 14 3H Pulley

A sag finder clutch belt

33 ~~Soften~~ fall on screen over 3H

A34 Check plate 3H keep on in

A35 ~~New belt 12 Conveyor [illegible]~~

A36 ~~Adjust [illegible]~~

~~Conveyor belt [illegible]~~

37 Ventilate from stock H 2

38 Screen over drip tank [illegible]

39 ~~[illegible]~~

~~[illegible]~~

9 iron feed holes 12" max pitch
Trying experiment iron parting
boards —

Money in bank Jany 27 12 000

~~Feby 7 76 00~~

Notes to July 38938
4264
38933

Edison 82 200

Olsen accts Feby 2nd 6591.

Feby 7th 7600 —

~~Feby 7th 9000 in bank~~

~~Feby 16 12 00~~

" 19 8500

Feby

~~1 Notes 1700 00~~

4th " & Nat'l co ~~6000 00~~

~~4th Stages 900 00~~

PAY ROLL

~~5 Cash Nat'l Bank 1250 00~~

25 ~~Orange 400 00~~

" O.G.C 1250 00

~~10th Upton & ins 1500 00~~

~~25 Brooklyn Trust Co 1500 00~~

15 Royalties 1220 new
600 latter - 1800 00

~~25 Cleveland Gas 1900 00~~

~~26 Vulcan 1750 00~~

~~28 Vulcan 1500 00~~

1790 00

Oct & Nov accts 952 00

~~Sherman Fur Co 900 00~~

March				April			
31st	Taxes 500 bal 1st qtr	500		1st	Notes	5198	00
~~1st~~	~~Notes~~	~~3075~~	~~00~~	6	"	269	00
	~~Notes renewable~~	~~8006~~	~~00~~	20	"	1071	00
8	Poly 1/2 renewable	2060	00	20	Alexander note	17000	00
15	N.Y.C open acct	433 ~~[illegible]~~	00		Jerry open acct	~~[illegible]~~	
20	Bergmann note	5000	00	25	Orange	400	00
	PAY ROLL	5700	—	25	O.J.C	250	00
22	O.J.C	250	00	24th	Russell Loan	20000	00
25	Orange	400	00		~~Payroll~~		
					Insurance		
					PAY ROLL		
	1400			30	Notes —	14252	00
	3075				5198	32000	total
	1030				269	25000	
	621				1071		
	5000				2500		
	650				650		
	11776				5000	+ Russell	20000
					14698	+ Alexander	17000

May

3rd	E9Co note	2738 00
11th	Bergmann note	5000 00
	~~Notes~~	~~10668~~
	PAYROLL	5000
	Feby open accts	613 2
	Royalties	
	~~Insurance~~	
25	Orange	400 00
"	OGC	250 00
	~~Royalties~~	
	~~Insurance~~	
15	Bergmann Note	5000
1st	Notes	405
3rd	"	6997
8	"	1040
20	"	1519
30	"	700

June

1	~~Notes~~	~~[illegible]~~
	March open accts	
	PAYROLL	5000
	OGC	250
	Orange	400
	Royalties	
	Insurance	
22nd	Oper loan Remunerat	8000 00
25	~~Chemcraft~~	~~[illegible]~~
25	~~Vulcan~~	~~[illegible]~~
1st	Notes	7450 —
14	Bergmann Note	5000 —
21	Notes	~~[illegible]~~
23	"	6403 —
25	"	4006 —

	July				Aug		
1st	~~Notes~~	~~1086~~	~~00~~				
17	Mrs Upton	700	00				
	OGC	250	00		10 Upton transfer	6500	00
	Grange	400					
	April open accts			18th	Gaunt & Batch	10000	00.
	PAY ROLL						
	Insurance						
	Royalty						
1st	Taxes	900	00				
1	Water	2143	-				
2	"	1050	-				
25	"	1086	-				
	Notes to Sly & Co 1688-?						
	" Moore 1350-?						

February

~~Royalties~~ 18.00
~~Oct & Nov accts~~ 952

Contents in Tons of cones of Concentrate stock H 1902

Cone 1 ft	.11	Ton
2	.91	"
3	3.01	"
4	7.34	"
5	14.33	
6	24.79	
7	39.27	
8	58.75	
9	83.67	
10	114.5	
11	152.8	
12	198.3	
13	252.2	
14	314.9	

March

~~5~~	~~Note S Shovel~~	~~1030~~
	~~Payroll~~	~~5500~~
	~~Dec open acct~~	~~1433~~
20	Bergman	5000
	O&C	250
	Orange	400

Unfilled orders	31st	1446
Bills to	31	2828
Cash in	31	1000

April

1	Notes	[illegible]
~~6~~	"	~~269~~
20	"	1091
~~20~~	~~Alexander~~	~~12000~~
	~~Gang open acct~~	~~959~~
	~~Orange~~	~~400~~
	~~O&C~~	~~250~~
~~24~~	~~Kissell~~	~~20000~~
~~30~~	~~Note (Renewal)~~	~~2552~~
	~~Payroll~~	~~$ 7[illegible]~~
	~~Gang open acct~~	~~[illegible]~~
	Payroll	7527
29	Insurance	1357
29th	Bills for april	[illegible]
29	Coal	468
	March Coal	1615

May

1	~~Note~~	~~1400~~
~~3~~	~~"~~	~~6997~~
~~3~~	~~E&C note~~	~~2438~~
8	Note	1040
~~11~~	~~Bergman~~	~~5000~~
15	Bergman	5000
20	Note	1519
	Orange	400
	O&C	250
	Pay roll.	~~6780~~
	~~Open accts 4/29~~	~~678~~
30	Note	700

Royalties —

Open act McN	1223
Mny bills to 6th	1329
Unfilled orders 6th	1194

June

1st	Notes	7450
4th	" German Ntl	5000
21	Notes	1575
22	Dyers loan	8000
23	Notes	6403
25	"	4006
	Payroll.	
	Orange	
	O&C	
	Open accts	
	Bergman	
	Royalties	

July		
1	Taxes	900
1	Note	4055
2	"	1050
17	" Mrs Upton	700
20	"	1086
9th	Note	5000
	~~Publishment Taxes~~	~~1600~~
	~~Insurance Taxes~~	~~1500~~
	Payroll	
29	Note	487
20	Alexander	12000

August		
10	Upton & wife	6500
19	Balch & Grant	10000
1st	Note	2035
1st	Note,	3501
30	Note	2603

Sept				Oct			
25	National Searles Loan	10 000.			May	400	
29	Nat.	493					

Long depreciation on
Crushing plant outside of
Repairs + regular wear

$3486.00

Mill 1

14705.00

Briquetting 19350.00

37541.

November

Fisman-June 992

P&S May 7.

25591.

December

Insurance policy 512

grade	output	Extra Cost Daily	Total Daily Cost	Cost per Ton Product	Increase Cost per Ton Crude	6.0	6.5	7	7.5
16.5	4000	#	1047	1.78		130	164	198	232
15.5	4300	57.00	1104	1.84	6	124	158	192	226
14.5	4600	114	1161	1.90	6	118	152	186	220
13.5	4900	171	1218	1.97	7	111	145	179	213
12.5	5300	247	1294	2.05	8	103	137	171	205
11.5	5800	342	1384	2.16	10	92	126	160	194
10.5	6300	437	1484	2.26	11	82	116	150	184
9.5	7000	550	1597	2.38	12	70	104	138	172
8.5	7800	702	1749	2.55	17	53	87	121	155
7.5	8800	892	1939	2.76	21	32	66	100	134
6.5	10200	1158	2205	3.05	29	3	37	71	105
5.5	13100	1709	2757	3.66	61	=58	=24	10	44

Concentrate 9.08 tons.
1 unit lost in tails
Mining cost Constant 7.35 Ton Crude
Wear & coal proportional to crude

8X10 - Drilling 15 Dy-
Wear 7 Coal 4.8 Crude

Profit ton Briquettes
9.08 tons daily output
Weight 1.5

Holes 20 deep, cost drilling per hole.
$120 – Depreciation ~~[illegible]~~

	Tons	Cost	
4X3	19.2	18.2	
4X4	25.7	13.6	4000 Tons day
5X4	32.1	10.9	Saving
6X5	48.2	7.26	Yearly
6X6	57.9	6.05	
7X6	67.5	5.18	83 000
8X6	71.1	4.92	
8X7	90	3.88	
8X8	103	3.39	
9X8	115	3.43	
9X9	130	2.69	
10X9	144	2.43	20 000
11X10	177	1.97	
12X11	212	1.64	
12X12	250	1.40	5000
14X13	292	1.19	

Depreciation

		Price	
30 Buckers	40000	10%	4000
4 Mixers	7000	10	700
1 Dryer	1000	6	60
16 Ovens	35000	15%	5250
Buildings	35000	8%	2800
Belt conveyors	8000	20%	1600
Stackhouse	15000	8%	1200
Rope Conveyors	4000	10%	400
Scraper "	800	30%	240
Muck House	2000	20%	400
Engine	6000	10%	600
Boiler	4000	10%	400
Gearing	4000	20%	800
Other moving parts	4000	20%	800
			19350

Oz. pan and gold

	Mesh	Milligrams	Cents
1	On 1/4	260	4.40
	1/8	200	3.4
	092	110	1.8
	072	130	2.2
	058	270	4.5
	045	240	4.4
	035	190	3.2
	027	370	6.27
	020	320	5.42
	015	120	2.00
	012	80	1.30
	009	60	1.00
	007	10	0.20
	005	3	
			40 Cents

Leave off 1/4 3516

1/8 3212

" 7+5 mesh 32,

150 pans to Cubic yard

20 lbs per miners pan

1 sqr inch Hg 7.11.3
" " hho 32768 $\frac{1}{32}$ s sqr
" " 210 grammes
" " 210000 milgms
" " 1024 inches long $\frac{1}{32}$ d/s
1 milimpere deposits 3.73 milgms hour
1/32 sqr inch ampho 6.4 milgms -
in .008 Gors 1/32 inch sqrs
15/32 movement,

	am
12" mag	15
8	12
4	17

Gold

1 oz sample of ore on of Clara

		Tow
1 Color	1/1000	1.2 Cent
1 "	2/1000	10 Cent
1 "	3 "	33
1	4 "	81
1	5 "	156

4 to ow -

1	15/1000	8.43
	20	10.00
	27	24.60
	35	53.50
	45	113.90
	58	243.89

Mineral		lbs		
		94		[illegible]
1	discarded	40		8460
3	screen [illegible] 1/2"	31		6572
3	1/4 mesh hole	3		636
4	1/8	4		848
	092	2		424
	072	1 1/2		322
	058	1		212
	045	2		424
	035	2 1/2		530
	027	1 1/2		322
	020	3		636
	015	1		212
	012	1		212
	09	3 1/2	03	42
	07	4 1/2	03	60
	05	9	03	120
	04	1 1/2		20

		Fe	P	[illegible]
Chapin	$2.56	62.05	.066	58.21
Ray	234	56.96	.063	53.45
Palma	260	63.03	.058	54.90
Brockton	274	62.58	.055	54.84
Minnesota	336	67.98	.046	67.38
Norris	284	63.88	.039	57.31
Atlantic	273			
Chandler	313			
Aurora	295	62.44	.028	56.20
Republic Spcl	365			
" Specular	335			
" Magnetic	327			
Kingston	317			
Ashland	280			
Pioneer	303			
Angelina Hard	364			

Mills for — gold, silver, copper, zinc, lead,
Tin, Iron, graphite, Portland Cement,
Common Cement, plaster, Gypsum,
Concrete, ballast, wood-working,
Mineral paints, clay paints, phosphate rock
Dorsey process phosphate clay, Quartz,
Emery, Mattey, Feldspar, Talc
Limestone, pumice, magnesite,
Ferromanganese, Marble, (white) clay
Asphaltic Limestone, Bone phosphate,
Asbestos mining, Antimony Concrete,
Portland (90% min required, dense bodies)
flint, Mica paint, Barytes.

4-5 Conveyor

Buckets hauling		
20		90 tons hour
30	~~96~~	141 "
40	~~192~~	188 "
50	~~237~~	235
60	273	282
70	318	330
74	336	348

4-5 Conveyor

1 lb is 4.16 Tons,
at 172 buckets per min

Air separation 1

Weight -

Taking .001 as weighing 1 milligram

3	27
5	125
7	343
9	729
12	1.728
16	3.096
20	8.000
27	19.683
35	48.750
45	91.125
60	216.000
80	512.000

Surface

Taking .001 as surface

	Sq. mils
	.006
	.0
3	.054
5	.150
7	.294
9	.486
12	.864
16	1.536
20	2.400
27	4.374
35	7.350
45	12.150
60	21.600
80	38.400

	8	4
12"	1.2 amp	17 amp
15 amp	140 V	85 Volt
66 V	226 amp	170 55 Total
300 Total		272

Math Underhill
Number 1800 ft long
150 turns 80 turns
Magnetor –
3½ on 2nd Tests

Feet Gone	30	35	40	45	50
First Tests 1½	1.97	1.9	1.52	1.37	1.26
" 1¾	2.3	2.05	1.91	1.78	1.69
" 2½	2.57	2.41	2.29	2.21	2.14
" 2⅝	2.87	2.77	2.69	2.64	2.57

Plant Operations Notebook, PN-97-01-27

This pocket notebook was used by Edison, probably in 1898, for notes, calculations, and drawings. The book contains a variant version of the cost and financial information recorded in PN-97-00-00.2. Also included are two versions of a proposal for a syndicate to finance operations at the Ogden works, a proposal for a "small temporary syndicate" to purchase the phonoplex business, and notes and drawings regarding mill operations and machinery. The pages are unnumbered, and the book has been used in both directions. Approximately 40 pages have been used. The book has been filmed at a reduction ratio of 10:1.

Syndicate, 15 or 20 persons
Capital 75,000
Manager Brooks

Object of Syndicate,
Advance money to the
Nipha Cmty Works
for operating plant now
ready

1st Security notes of the Co
endorsed by Edison
6% interest

2nd ~~assignment~~ on Shipped
to be billed + account
assigned to Syndicate
as additional Security

Notes and cash received from sales of ore to ~~buy~~ Co. mill to be guaranteed notes until paid in full.

Profits of Syndicate
1st 6% interest

2nd Syndicate to receive profits on: ore up to ten thousand tons, profits determined independent of general depreciation on plant.

3rd Syndicate to have option at par one 75 000 of 100 stock ~~after~~

if taken ~~[illegible]~~ ~~mill~~ within one year

1 Shift

Coal		
Draper P 5 tons	14	00
" 2 2 "	5	60
" 3 1 "	2	80
Ovens at Pricker 16 tons	44	80
Barberick 10 tons	27	50
Climax 14 "	38	50
Pricker Climax 6 "	16	50
Vulcan + Victor 4 "	11	00
Lucas - 2 tons	5	50
Dam, Wood Equiv. 2 tons	5	50
	171	80

Thank it would be $53 lower
if was Run at Bee Ovens
Boys 2 43

Power plant		
2 firemen	3	25
1 Engineer	3	00
Dynamo tender	1	50
Indicator man	1	25
General Electrician	3	00
2 Day assistant	3	00
1 Repairman	1	75
	16	75

Briquetting		
Supt	4	10
Foreman	2	50
B line	1	25
Dryer	1	25
Muck at mixer	1	50
Mixer watcher	1	25
Conveyor Belt watchers	1	25
2 foremen ovens	3	00
2 Under Brickers	2	50
2 Muck Hoisters	2	75
2 at Loading	2	60
1 No 3 Stock Pile Belts	1	25
1 other " "	1	35
1 Engineer	3	00
1 Chimney fireman	1	75
6 Bricker men " "	7	50
1 Repair machinist	2	25

2 cleaners	2	50
1 Thermometer	1	25
1 Loco B Tender	1	25
	46	15

3 - carried forward
46 -

Mining		
Mine Boss	4	00
" " assistant	3	00
Surveyor	3	00
Track Foreman	2	50
1 Track + General	17	50
Vulcan	16	25
Victor	16	25
3 Locos	4	80
3 Brakeman	4	50
2 Trimmers	2	50
10 Drillers	17	50
10 Helpers	12	50
2 powder	2	50
2 Blacksmiths	4	00
2 " Helpers	2	50
Extra —	10	00
Sum	123	30

General. $30 cash got off

Oil house	1	25
Yard foreman	2	50
12 yard men	18	00
4 store "	6	50
Shipping + Recg clerk	2	00
Cunningham	4	00
" Clerk	2	00
4 Clerks	9	00
1 Draughtsman	4	00
3 Machinists "	4	50
8 Carpenters "	18	00
24 Machinist "	54	00
7 Boys	7	00
1 Stable "	1	50
3 Carts "	5	00
1 Steam filter	2	50
Chief Engineer	5	00
	136	75

	136	75
Master Mec	5	00
Asst Supt	6	00
Day foreman	3	50
Dam Engineer	1	75
Muzzleman	1	25
3 Assay	3	25
3 Blacksmith	6	00
3 " Helper	3	75
2 Boys office	2	00
Extra "	15	00
	184	25
Shipping -		
1 Foreman	2	50
20 men	25	00
4 Carts	8	00
	35	50

Crushing Plant		
Dynamo Tender	1	25
Engineer	3	00
4 chamers	5	00
2 Top Dumpers	2	60
3 Small Rail men	4	20
2 Crane men	3	00
Dryer foreman	1	75
1+2 Conveyor	1	40
Dryer Top	1	50
Conveyor 3	1	75
Shoveller	1	25
Fireman	2	50
Manager	4	50
Giant & Melendrich	1	40
Roller feed	1	35
	36	45

Mill 1		
Supt	5	00
Foreman	3	00
Under 1 Stock H	1	25
Runway 4+5	1	25
Top 4+5 Conveyor	1	75
Under floor	1	60
2 Stockmen	3	20
Pit	1	60
Middle Mill	1	60
South End	1	60
Top Dryer 2	1	50
Fireman	1	35
14 M Screens	1	75
14" Magnets	1	60
Top Elev 4+5	1	60
Over 8" Magnets	1	50
8" Mag	1	75
4 Magnets	2	00
Blower	1	60

Belt Machine	1	60	Cost Muck	4.4 cents	Ton Gross
Sand	1	50	" Dynamite	1.8 "	"
Stockhs etc	1	50	Wear plates shutes	3¢ "	"
2 Cleaners -	2	70	Other wear	3¢ "	"
Boy	1	00			
Order	1	50		Daily	
2 Fireman	3	25	Taxes Ins + Drainage		75 00
1 Coal passer	1	25			
2 Engineers	6	00			
	56	45			

Big Mill Mt Olive
1600 Tons
Cost $1.-
Sell at
$1.60 -
profit 2 million

4.4 tons

Crude to ton 68%

Conc to Basis.

Day

Resume

Coal	171	80
Power plant	16	75
Briquetting	46	15
Mining	123	30
Haul	184	25
Crushing plant	36	45
Mill 1	56	45
Outside general	75	00
	710	15

add 52¢ per ton concentrate for Dynamite, wear, + Mulch.

Night shift 467.00

Total $1177.00

80 ft –

Day run only

	Cost Pinch	
1000 tons	3	64
1200 "	3	12
1400 "	2	75
1600 "	2	47
1800 "	2	25
2000 "	2	08

~~1400 tons 5.5 loss 7 cents 22 ton~~

1400 tons " 19 c gain

Both Days mg.

			Cinc	c	
2000	3	11	454	27	35 5 25
2400	2	68	545	70	110 490
2800	2	37	636	101	186 180
3200	2	13	727	125	245 000
3600	1	95	818	143	339 300
4000	1	81	909	157	413 830

6 c unit

	Cost	output
1000 tons	364	222
1200	212	272
1400	275	363
1600		

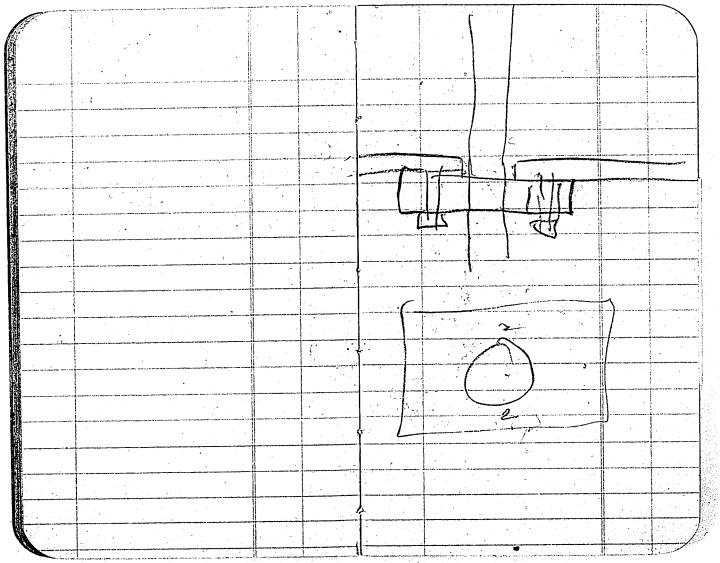
	Loss yearly
Receipts p.t. = 294.	46600
"	14600
~~Gain~~	20690

Oneshift
5.5

Crush	Cost	Loss year
1000	227	47 000
1200	272	14 600
1400	318	gain 18 000
1600	363	" 51 000
1800	409	84 600
2000	454	117 000

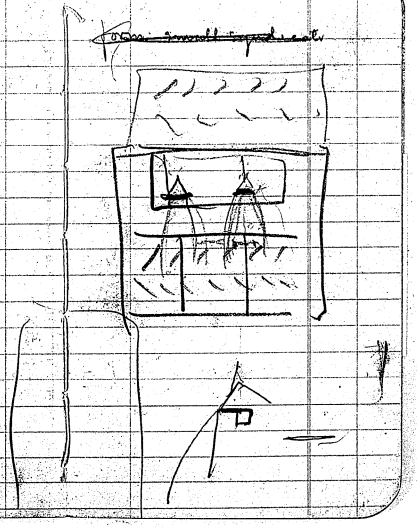
6c

Loss	21 000
profit	17 000
"	53 300
	93 650
	117 612
	170 000



	Sizes
Rolls 3 High	3
Giant Roll	2
4 ft Roll	1
36 "	2
24 "	1
14 "	1
12 "	1
Elevators	4
Conveyors swing Belts	3
" New swing	3
Scraper V	3
Screper	3
Breaking Machs	3
Rope Screw Conveyors	3
Dryers	4
Dedusters	6
Drying Ovens	4
Mixers	3
Screens	3
Magnetic Separators	6

Self ordering Rollers 4
Wobblers 5
Rollerfeeds 6



form small temporary
Syndicate Capital 25,000
10 or 15 subscribers
purchase embrace, patent or
business of phonograph from
Edison at 20 000 cash.

Appoint a manager of
Syndicate to run it
until you form a Company
& use the 500 for a
travelling man & expenses
& work up business

2nd form a Co or
transfer the holdings of
the Syndicate to new
Co for 75 000 & stock
bonus –

45
225

2283

Jany 27th	Feby 1 notes	4268
In bank $12000	" 6 "	200
with Dec payroll paid	" 25 Poly Renewal	1965
& ———	22 payroll	4500
	Oct + Nov open act.	1472
	25th Orange	400
	25 Conley	260
	25 Taxes	900
	& Nott Note Renewable	5000
	25th Upton rev "	6500
	~~25th Phoenix Trust~~ "	5000
	March 1 Taxes	1400
	Notes	3075
	Notes renewable	8006
	" 8th prbl. 1/2 Renewal	2060
	" 15 Dec open acts	621
	22 payroll	4500
	22 O&C	250
	25 Orange	400
	20 Bergmann	5000

April 1st Notes	5198
6th "	269
20 "	10 71
22 payroll	4500
gang Open accts.	~~2500~~
Orange	400
O&C	250
Royalties	
Insurance	
20, Alexander	12000
24 Russell	20 000
May 3rd E9CC	2738
May Notes	10.666
payroll	4500
Open accts	
O&C	250
Orange	400
11th 9 Bloomm	5000
Insurance	

June Notes	3292
payroll	4500
Open accts	
O&C	250
Orange	400
Royalties	
Insurance	
27th Dyer	8000
July Notes	1086
17th Mrs Lyter.	700

38
3
12) 114 (9
108

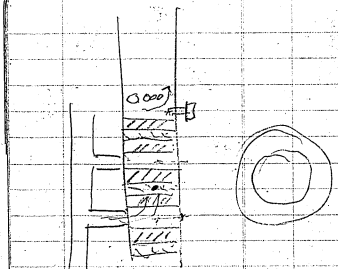
124

1500
3
9) 4500 (500
2500

122

60

10.9 off-



363
19
3267
363
6891.300
20.691

44) 1200 (272
88
320
316
12

68
532
340

364
294
70

340
374
80

222
74
1554.000
4662.000

222) 77800 (319
666
41
222
198
19

52
371

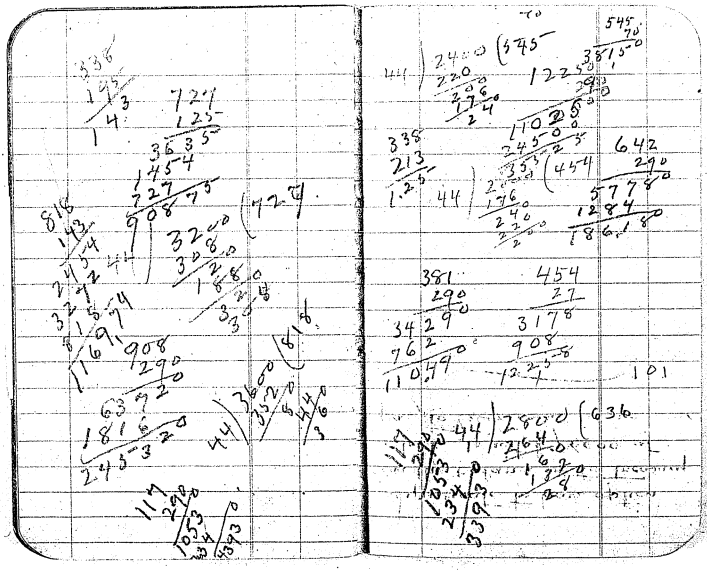
312
294
18

275
294
81
294
275
19

272
5
2176
272
4896.300

363
19
3267
363
6891.300

44) 1600 (363
132
280
264
160



[THIS BOOK WAS USED IN BOTH DIRECTIONS.
THE FOLLOWING PAGES WERE FILMED FROM
THE BACK END FORWARD.]

Syndicate 10 or 15 persons

Capital $75 000.

Manager - - - - - -

Object of Syndicate to finance the New Jersey & Penna Concentrating Works for operating their plant,

1st Money to be advanced from time to time for labor and materials

2nd for advances thus made Syndicate is to receive notes of the Company ~~indorsed~~ by Edison

over

2nd As additional security, ore as fast as shipped to be billed and account assigned to the Syndicate,

4th Notes and cash received for ore to be used to liquidate the advances of the Syndicate until paid —

Profits to Syndicate

1st 6% on the advances

2nd All the profits from the first 10,000 tons of ore to go to Syndicate, profits determined independent of general depreciation charges

over

Syndicate to have option on the balance of the treasury stock to wit, $78,000 at par, to be exercised in one year

NEW JERSEY AND PENNSYLVANIA CONCENTRATING WORKS MINUTES

These records cover the period 1888-1900. In addition to the company minute book, there are unbound duplicate minutes of directors' meetings for 1891 and 1892 and miscellaneous related items for 1896. Only the minute book has been filmed.

The minute book, which covers the period December 1888-January 1900, contains the minutes of directors' and stockholders' meetings, a copy of the company's certificate of organization (notarized December 29, 1888), and the by-laws as adopted at the first board of directors' meeting on January 29, 1889. The subjects covered include the election and resignation of officers, the appointment of general managers, calls for capital, and increases in capital stock. Specific discussions involve mine properties known as the Gilbert Ore Mine, Scrub Oak Mine, and Ogden Mine; negotiations regarding the royalty agreement with the Edison Ore Milling Co., Ltd. (1890); the purchase of the Ogden Mining Co. (1891); the death of Robert L. Cutting, Jr. (1894); and the removal of the company's offices from New York City to the West Orange laboratory (1894). Also included are two long reports by Edison on the status of the company's mills (1890, 1898).

The front cover is stamped "New Jersey & Pennsylvania Concentrating Works Minute Book." The spine is stamped "Minute Book N.J.& P.A. Works." The book contains 299 numbered pages. Inserted pages include letters, proxies, and voting records. A few unbound items consisting of draft versions or typed duplicates have not been filmed.

Blank pages not filmed: 133-299.

Certificate of Organization of the New Jersey and Pennsylvania Concentrating Works.

This is to certify that we Harry M. Livor, Joseph Hutchinson and A. O. Tate, do hereby associate ourselves into a company under and by virtue of the provisions of an Act of the Legislature of New Jersey, entitled "An act concerning corporations", approved April 7, 1875, and the several supplements thereto, and acts amendatory thereto, for the purposes hereinafter mentioned, and to that end we do by this our certificate set forth:

First. That the name of the said company to be used in its business and dealings is the "New Jersey & Pennsylvania Concentrating Works."

Second. That the place in this State where the business of the said company is in part to be conducted, is the City of Orange, County of Essex, and that the business of the company is also to be conducted at such other places in the States of New Jersey and Pennsylvania, as well as throughout the United States, as may from time to time be designated by the said company; That the principal offic

of the company will be located in the city, county and State of New-York, or at such other place as may be hereafter designated by the said company: that the objects for which the said company is formed are to mine, separate, smelt or otherwise treat, concentrate and deal in iron and other metallic ores and the products thereof, to purchase or acquire patents, inventions or rights, applicable to the said objects and to grant rights thereunder, to buy or lease real estate and to erect thereon buildings or machinery for the aforesaid uses of the said company, to issue bonds secured by mortgage or mortgages upon the property of the said company and to sell the same for the purpose of raising money to aid in prosecuting the aforesaid business, to do all acts incidental to the said business, and to exercise all powers granted to corporations in the not or acts above mentioned.

Third. That the total amount of the capital stock of the said company is Thirty thousand Dollars, the number of shares into which the same is to be divided being Three hundred shares, and the par value of each share being One hundred Dollars, and that the total amount of the said stock will be paid for at par in cash, as follows, to wit, at least ten per centum thereof upon the organization of the company, and the balance at such time or times as the said company may designate, or as may be required by law.

Fourth. That the names and residences of the stock-

holders and the number of shares held by each, are as follows, to wit:

Thomas A. Edison	Orange N. J.	One hundred shares.
R. L. Gerthing	New York City N. Y.	One hundred shares
Samuel Insull	Schenectady N. Y.	Thirty shares
H. M. Livor	New York City, N. Y.	Thirty shares
W. S. Perry	New York City, N. Y.	Thirty shares
A. O. Tate	Orange N. J.	Five shares
J. Hutchinson	New York City N. Y.	Five shares.

Fifth. That the stock of the said company shall be transferable only on the books of the company and only by the holder thereof in person, or by an assignment made upon said books by the holder thereof, subject to such restrictions and upon such terms as the by-laws of said company may from time to time prescribe.

Sixth. That no stock-holder shall have the right or power to examine any of the books of the said company without the consent of the person or persons owning a majority of the entire stock, save and except, however, that the book or books in which the transfers of stock are registered, and the book or books containing the names of the stock-holders from time to time, shall be open to the examination of every stockholder for thirty days previous to any election of Directors of the said company.

Seventh. The period at which the said company shall commence business is the first day of January, one thousand eight hundred and eighty nine, and the period at which the business of the company shall terminate is the thirty first

day of December one thousand nine hundred and thirty-nine

In Witness Whereof we have hereunto severally set our hands and seals this the 27 day of December one thousand eight hundred and eighty eight.

M. J. Insull } Henry M. Livor (L.S.)
witness to Mr Livor.

John Dwyer } Joseph Hutchinson (L.S.)
witness to Mr Hutchinson.

Thomas C. Jenks } A. O. Tate (L.S.)
witness to Mr Tate.

State of New York
City and County of New York } ss.

Be it Remembered that on this 29th day of December 1888, before me, a Notary Public for the City of New York, personally appeared Henry M. Livor, Joseph Hutchinson and A. O. Tate who I am satisfied are the persons named therein and who executed the foregoing certificate, and I having first made known to them the contents thereof, they did acknowledge that they signed, sealed and delivered the same severally as their voluntary act and deed.

Thomas C. Jenks,
Notary Public, Kings Co.
Cert. filed N. Y. Co.

County Clerk's certificate as to signature of Notary here attached. (Seal)

By-Laws

of the New Jersey and Pennsylvania Concentrating Works.

Adopted January 29, 1889.

Article I.

Office of the Company.

An office of the company shall be located in the City of New York, but the company shall always maintain a principal office or place of business in the State of New Jersey at the laboratory of Thomas A. Edison, Orange, and have an agent of the company in charge thereof, wherein shall be kept the stock and transfer books of the company.

Article II.

Officers.

The Officers of the company shall consist of Five Directors, constituting the Board of Directors of the company, a President, Vice President, Secretary, Treasurer and General Manager. Any one or more of these offices, except the President, may be held by one and the same person.

Article III.

Directors.

The Directors shall be chosen by ballot at each annual

meeting of the Stockholders, and shall manage and conduct the business of the Company. No person shall be qualified as a Director unless he be a stockholder of the Company

Article IV.
President and Vice President.

The President and Vice President shall be chosen by the Stockholders at their annual meeting, from among the Board of Directors chosen at such meeting. The President shall preside at all meetings of the Stockholders and Directors, shall sign all Certificates of Stock, and all contracts or obligations of the Company and shall have general management and control of the business of the said Company and perform all duties pertaining to his office. The Vice President shall perform all the duties and have all the power of the President in his absence

Changed see folio 129.30

Article V
Secretary.

The Secretary shall be elected by the Stockholders at their annual meeting, and shall before taking office be sworn to the faithful discharge of his duties, if the Board requires it. He shall have the custody and care of the Seal, records, minutes and stock books of the Company, and shall record all meetings, ballots, votes of all stockholders of the Company and the meetings and votes of the Directors and of all Committees in a Minute Book to be kept for that purpose, and shall do

Changed see folio 129.30

and perform such other acts and duties as shall be assigned to him by the Board of Directors or President

Article VI.
Treasurer and General Manager.

The Treasurer shall be elected by the stockholders at their annual meeting. The Treasurer before taking office shall, if the Board of Directors require it, give a bond to the Company in the sum of $1000. with two sureties conditioned for the faithful discharge of his duties. He shall have the care and custody of the books of account and of the moneys of the Company, and shall sign all checks to be used in the regular course of business, and shall do and perform such other acts and duties as shall be assigned to him by the President or the Board of Directors.

The General Manager shall be elected by the stockholders at their annual meeting. He shall have charge of and superintend the current business and affairs of the Company and shall do and perform such other acts and duties as may be assigned to him by the President or Board of Directors

Article VII.
Other Officers.

The Board of Directors, shall from time to time appoint such other officers, agents and employees as they shall deem proper, and shall fix the salaries of all of the officers and employees of the Company.

Article VIII
Term of office and Vacancies.

The Officers of this Company shall hold office for one year from the date of their election, or until the next annual meeting subsequent to their election is held, and until their successors have been elected and qualified. Any vacancy occurring in the Board of Directors or in any of the offices of the Company, either by death, resignation or removal shall be filled by the stockholders at a special meeting to be called for that purpose. Pending the holding of such meetings and the filling of vacancies by stockholders' action, the Board may temporarily fill all vacancies.

Article IX
Meetings of Stockholders.

Section 1. The annual meeting of the stockholders shall be held at the office of the Company at the Laboratory of Thomas A. Edison, Orange, New Jersey, on the second Wednesday of January in each and every year, beginning with the month of January 1890. No meeting shall be held unless a majority in interest of the stockholders shall be present either in person or by proxy, but a lesser number may adjourn the meeting from time to time for not less than periods of one week, to be held at the same place. Thirty days before such annual meeting the book or books of the Company in which the

Changed as Folio 12[illegible]

transfer of stock shall be registered, and the book containing the names of the stockholders shall at all times during the usual hours of transacting business be open to the examination of every stockholder, and ten days before such meeting the Secretary shall make out a full, true and complete list of all of the stockholders of this Company entitled to vote at the ensuing election, with the number of shares held by each, which list shall be made and arranged in alphabetical order, and shall at all times during the usual hours of business be open to the examination of any stockholder. Notice of said meeting shall be mailed to each stockholder at his last known residence at least ten days in advance of said meeting.

Section 2. Special meetings of the stockholders may be held at any time by order of the President, notice at least ten days notice in writing to the stockholders mailed to them at their last known residence.

Section 3. At all meetings of the stockholders, absent stockholders may vote by proxy authorized in writing.

Section 4. A majority of the stockholders in interest represented either in person or by proxy shall constitute a quorum.

Section 5. Each stockholder shall be entitled to one vote for each share of the capital stock held by him.

Article X
Meetings of Directors.

The Board of Directors shall meet at the office of

the Company at Mr Edisons Laboratory, Orange, New Jersey, immediately after the annual meeting of Stockholders on the second Wednesday of January in each and every year. If a Stockholders meeting is not held on that day, the Board shall meet immediately after such meeting whenever held. A majority of the Directors shall constitute a quorum but a lesser number may adjourn the meeting, the same to be held either at Mr Edisons Laboratory as aforesaid, or at the office of the Company in New York City as the Directors adjourning the meeting may determine. Special meetings of the Directors may be held at any time by order of the President, after five days notice in writing mailed to each director at his residence or place of business. The Directors may meet at any place designated by the President, either in Orange or New York City.

changed as folio 129

Article XI
Stock and Transfer thereof.

Sec. 1. Every stockholder shall have a certificate signed by the President and Treasurer certifying the number of shares owned by said stockholder.

Sec. 2. The stock shall be transferable only on the books of the Company by the holders thereof in person, or upon an assignment made upon said books. No stock shall be sold, transferred, mortgaged or hypothecated, and no sale, transfer, mortgage or hypothe-

cation thereof shall be valid for any purpose, without the written consent of the person or persons owning a majority of the stock indorsed on the certificate of stock; and thirty (30) days before any proposed sale, transfer, mortgage or hypothecation, a notice in writing must be given to the person or persons owning a majority of the stock by the stockholder desiring so to sell, transfer, mortgage or hypothecate his stock, containing a statement of the number of shares proposed to be transferred, sold, mortgaged or hypothecated, the consideration therefor and the name of the proposed transferee or mortgagee together with an option to the said person or persons to purchase or loan on the same at the consideration therein stated. But the giving of said notice and option shall in no way be construed as interfering with the right of the owner or owners of the majority of the stock to forbid such sale, transfer, mortgage or hypothecation. In case a majority of the stock is owned by one stockholder, the notice and option herein provided for shall be dispensed with, and such stockholder's consent to the transfer or other disposition of his said stock, or any part thereof indorsed on the certificate, shall be deemed a compliance with the provisions of this section.

Article XII
Examination of Books.

No stockholder shall have the power or right to examine any of the books of the said Company

without the consent of the person or persons owning a majority of the stock; but the book or books in which the transfer of stock shall be registered, and the books containing the names of the stockholders, shall be open to the examination of every stockholder for thirty days previous to any election of Directors.

Article XIII.
Dividends.

On the second Wednesday of January in each and every year, or at such other time as the regular meeting of the Board of Directors provided for in Article X herein may be held, the Board of Directors after reserving over and above their capital stock paid in, as a working capital, a sum to be specified by the Board of Directors and not exceeding the amount of one half of the capital stock paid or secured to be paid, shall declare a dividend of the whole of their accumulated profits exceeding the amount so reserved as a working capital, and pass the share or dividend of each stockholder of such profits to the credit of the respective stockholders, and pay the same to such stockholder on demand.

Article XIV.
Amendment.

These by-laws may be amended or added to at

any regular or special meeting of the stockholders upon consent of a majority in interest of the stock.

Minutes of first Meeting of the Stockholders of the New Jersey and Pennsylvania Concentrating Works held at the Laboratory of Thomas A. Edison at Orange, New Jersey on the 29th day of January 1889, at 3 P. M.

Present the following stockholders.

T. A. Edison.	100 Shares
S. Insull	30 "
H. M. Lyon	30 "
A. O. Tate	5 "
J. Hutchinson	5 "

Mr Tate nominated Mr Insull as Chairman of the meeting, which nomination was seconded by Mr Lyon, and upon a vote being put Mr Insull was declared elected Chairman of the meeting.

Mr Lyon nominated Mr Hutchinson as temporary secretary and upon a vote being duly put by the Chairman, Mr Hutchinson was elected temporary secretary.

Mr Lyon presented to the meeting and read a waiver of notice of the time and place and purpose of the first meeting of the company, signed by all the incorporators and subscribers, and a certified copy of the certificate of the organization of the New Jersey and Pennsylvania Concentrating Works.

Mr Insull moved that the secretary of the company be directed to spread upon the minutes of the meeting the waiver of notice of the meeting. Motion was seconded by Mr Tate, and upon being put by the Chairman, was carried. The said waiver of notice is as follows:

Waiver of Notice of First Meeting.

We the subscribers, being all the parties named in the certificate of the organization of the New Jersey and Pennsylvania Concentrating Works, do hereby waive notice of the time, place and purpose of the first meeting of said Company and do fix this 29th day of January A.D. eighteen hundred and eighty nine at three o'clock in the afternoon as the time, and Mr Edison's Laboratory Orange, N.J as the place of the first meeting of said Company.

Dated New York City, January 29. 1889.

Thomas A. Edison
R. L. Cutting
W. S. Perry
A. O. Tate
J. Hutchinson
R. M. Livor.

Mr Livor presented to the meeting and read a set of By-Laws for the government of the Company and moved their adoption as the By-Laws of the Company. The motion was duly seconded by Mr Tate and unanimously carried.

The Secretary was ordered to spread the By-Laws, and the Certificate of Incorporation, on the Minute Book of the Company.

The Secretary was instructed to procure a Minute Book for recording all proceedings of the Stockholders the Board of Directors, and all Committees; also a seal and form of stock certificate satisfactory to

the Board of Directors.

A ballot was then had upon motion, for the election of a Board of Directors to manage the affairs of the Company for the first year. The Chairman appointed Mr J. Moss Grove and Mr J. F. Randolph tellers of the election. Upon a ballot being duly taken the tellers reported that the whole number of votes represented at the meeting had been cast for T. A. Edison, S. Insull, W. S. Perry, R. M. Livor and R. L. Cutting, who were therefore duly declared elected directors.

Then followed a vote on a ballot which was not

Then

Mr Edison was nominated for President of the Company by Mr Insull. Nomination seconded by Mr Livor, and there being no other nominations and a ballot being taken, Mr Edison was declared unanimously elected President of the Company. Mr Edison thereupon took the chair and the election proceeded.

Mr Insull was then unanimously elected Vice President, and also Treasurer. Mr Hutchinson was unanimously elected Secretary, and Mr Livor was chosen General Manager.

The oath of office was then duly administered to the Secretary.

It was moved by Mr Insull and seconded by Mr Tate that the Board of Directors be and hereby are authorized and directed to issue stock at such times and in such amounts, for full payment in cash or its equivalent, as they may think best from time to time.

Only in some of U.S.

Mr Livor then moved that the meeting adjourn, and the meeting was declared adjourned by the President.

J. Hutchinson
Temporary Secretary.

Minutes of First Meeting of the Board of Directors of the New Jersey and Pennsylvania Concentrating Works held at the Laboratory of Thomas A. Edison Orange New Jersey, at 4 P.M. January 29. 1889.

Present, Messrs Edison, Insull and Lior; also Mr Kutchinson, Secretary. The President, Mr Edison in the Chair.

The Treasurer Mr Insull stated that 300 shares of stock had been subscribed for at par as follows:

T. A. Edison	100	Shares
R. L. Cutting	100	"
Samuel Insull	30	"
H. M. Lior	30	"
W. S. Perry	30	"
A. C. Fate	5	"
J. Kutchinson	5	"

On motion of Mr Insull, the following Resolution was unanimously adopted:

RESOLVED That the Treasurer of the Company be and hereby is authorized to make a call of 10 per centum that is to say of $10 per share, on account of subscriptions to the capital stock of the Company as aforesaid, payable February 10, 1889.

Mr Insull then stated that arrangements had been made subject to the approval of the Board, for executing a contract with Mr Hartgill and Mr Geiss for mining and concentrating ore at the Gilbert Ore Mine. The details of the contract were then submitted by Mr Insull, and discussed. The following Resolution was then

unanimously adopted: —

Resolved that Vice-President Insull and General Manager Liver be and hereby are empowered to execute a contract with Messrs Hartzell & Greiss relating to the Gilbert Ore Mine, in the name of the Company, and to have the Secretary affix the seal of the Company thereto. —

The following resolution on motion of Mr Insull was then unanimously adopted: —

Resolved, That the seal of the Company be a circular seal with the name of the Company printed on the outer edge, with year of formation, and the words "Lawes of New Jersey" printed in the middle; and that the Secretary procure such a seal. —

Mr Insull then called the attention of the Board to the desirability of leasing the South Oak Mines from the Andover Iron Company, and on motion the following resolution was unanimously adopted: —

Resolved, that the Vice-President and the General Manager be and hereby are authorized to lease the South Oak Mines from the Andover Iron Company on such terms and for such length of time as Vice-President Insull and General Manager Liver may determine, the Board hereby constituting them a special committee with full power; and that these two officers are hereby authorized to execute the said lease in the name of the Company and to affix the seal of the Company thereto. —

The Treasurer was then authorized to open a Bank Account in such Bank as he and the President might select, a report of the same to be made to the Board.

The meeting then adjourned. —

J Hutchinson
Secretary.

Minutes of a meeting of the Board of Directors of the New Jersey and Pennsylvania Concentrating Works held at the Laboratory of Thomas A. Edison, Orange, New Jersey on July 20th, 1889 at 11. A M.

Note as required by Bylaws.

Present:- Thomas A. Edison, Samuel Insull, H. M. Livor, W. S. Perry and Secretary Hutchinson.

Mr. Perry presented a power of attorney from Mr. R. L. Cutting appointing him (Mr. Perry) his attorney to vote at all meetings of this Company.

Mr. Livor reported that the experimental mill at Gilbert Mine required some additional machinery and alterations, particularly for the purpose of reclaiming the fine magnetic dust which, as the mill is now operated, is lost in the tailings. Cost of this machinery is estimated to be in the neighbourhood of $5000.00.

Mr. Perry moved that Mr. Livor be authorized to purchase such additional machinery, and the motion was seconded and carried.

Treasurer Insull advised the Board that the Capital Stock of the Company — $50000 had all been invested in the construction of the experimental mill at Gilbert Mine, and that to provide for the extension of this mill, of building additional mills and otherwise carrying on the business of the Company more Capital would be required, and moved that the Capital Stock of the Company be increased to $100,000. After discussion this motion was carried and the Secretary instructed to confer with Major S. B. Eaton, Counsel of the Company, as to the necessary legal measures required to so increase the Capital Stock.

Mr. Perry moved that the additional Capital Stock be so called as to permit the issuing of full paid certificates upon the payment of each call. That is to say, that instead of issuing

instalment receipts and delaying the issue of full paid certificates until the entire Capital Stock is paid up, the full paid certificates of Stock be issued for the amount of the calls as made.

There being no further business before the Board the meeting stood adjourned.

J. Hutchinson
Secretary.

Minutes of a meeting of the Board of Directors of the New Jersey and Pennsylvania Concentrating Works held at the Laboratory of Thomas A. Edison, Orange, N.J. on Wednesday, the 16th October 1889 at 3. P.M.

Present:- Thomas A. Edison, Samuel Insull, W. S. Perry, H. M. Livor, and Secretary Hutchinson.

Mr Insull moved that an additional call of $10000 of the Capital Stock of this Company be made at once. The motion was seconded by Mr Livor, and carried.

Mr Insull further moved that permission be given to the officers of the Company to call an additional $10000 of the Capital Stock as the exigencies of the business may demand it without further authority from the Board. The motion being seconded by Mr Perry, the question was put and the motion carried

It being stated by Mr Livor that Mr Edison had placed in his hands the sum of $5000 in connection with the purchase of half interest in the Gilbert Mine, and for meeting current

current expenses in connection with mining during his absence in Europe, and whereas Mr Edison was willing to turn over the property to this Company together with such other rights which had existed, and accruing, to Mr Edison in connection with the transaction, it was moved by Mr Insull that Mr Livor turn over to this Company an accounting for the $5000 above mentioned; the said sum to be credited to Mr Edison on the books of the Company on account of instalments on Capital Stock standing on the books against Mr Edison. It being seconded by Mr Perry, the motion was carried.

Mr Insull moved that the leases covering what is known as the Ogden Mine property be approved by this Board. The leases were presented by Mr Livor who stated that they had been examined by the Counsel of the Company and approved. This motion was carried, and instructions given to the officers of the Company to execute same.

Mr Insull moved that the General Manager of the Company prepare plans and specifications at the earliest possible date contemplating the construction of a Concentrating Mill to be located on the Ogden property — such plans to be submitted at a subsequent meeting of this Board. The motion was carried.

It was moved by Mr Edison that hereafter whenever a meeting of the Board of Directors of this Company is called a meeting of stock-holders be called at the same time.

Mr Hutchinson presented his resignation as Secretary of the Company to take effect on the 28th October. The resignation of Mr Hutchinson was accepted. Mr Perry then nominated as Secretary to fill the unexpired term, Mr Thomas Butler. The motion being seconded

seconded, it was carried

There being no further business before the Board, the meeting adjourned

J. Hutchinson
Secretary.

Minutes of a Special Meeting of the Board of Directors of the New Jersey & Pennsylvania Concentrating Works, held at the Laboratory of Thomas A. Edison, Orange New Jersey, at 2 P.M., November 4th 1889.

Present, Messrs, Thomas A. Edison, Samuel Insull, W. S. Percy and H. M. Leroy.

The President, Mr. Edison in the Chair

The Secretary presented a waiver of notice of this meeting of which the following is a copy:

We, the subscribers, being all the Directors and stockholders of the New Jersey & Pennsylvania Concentrating Works, do hereby waive notice of the time and place of the Directors' and Stockholders' meetings of the said Company to be held for the purpose of considering and taking action upon the question of increasing the capital stock of the said Company to the extent of $120,000, that is to say from $30,000, the present capital, to $150,000, the proposed future capital, and do fix the fourth day of November, 1889, at 3 o'clock in the afternoon, at the office of the Company, in Orange, New Jersey, as the time and place of the said meeting.

Dated Orange, N.J. November 4th, 1889.

Thomas A. Edison
A. O. Tate
Samuel Insull
W. S. Perry
R. L. Cutting
H. M. Liebs
J. Kitchelinson.

On motion of Mr. Insull, duly seconded the reading of the minutes of the last meeting of the Board was dispensed with.

On motion of Mr. Insull, the following resolution was then unanimously adopted:

Resolved, that it is the sense of this meeting (through the resolutional meeting of July 20th 1887 (page 33) that having brought upon) that the capital stock of the Company should be increased from $30,000. to $150,000., and that the officers of the Company are hereby instructed to take the necessary steps to make such increase; and be it further

Resolved, that the privilege of subscribing for such increase be in the first instance offered by the officers of the Company to the stockholders thereof, pro rata, under such restrictions and conditions as the officers of the Company or the Board of Directors may deem necessary, and that if all the stock

thus offered be not taken by the stockholders of the Company as aforesaid, the untaken increase shall be disposed of, but at not less than par, at such time or times and in such way as the Board of Directors of the Company may determine.

The Lehigh Valley Company's plot being apparently subject to possible litigation, it was moved by Mr. Liebs and seconded by Mr. Perry that the matter of making a lease from the owners of this property be left to the discretion of the Vice-President, Mr. Samuel Insull, and the General Manager, Mr. H. M. Liebs. Motion unanimously carried.

It was further moved by Mr. Perry and seconded by Mr. Liebs that the Treasurer and General Manager be empowered to call in the unpaid capital of the Company at such times and in such amounts as they in their discretion might deem necessary or expedient. — Motion unanimously carried.

The following resolution was then unanimously adopted: —

Resolved that the President and Secretary of this Company be and they hereby are authorized and empowered to execute a contract with

the Edison Ore Milling Company, in the name of this Company, by which this Company can obtain an exclusive license under the patents covering inventions of Thomas A. Edison relating to ore separators now owned by the said Edison Ore Milling Company, for the States of New Jersey and Pennsylvania, and that the Secretary of this Company be and he hereby is authorized and directed to affix the seal of this Company to such contract.

Upon motion the meeting then duly adjourned.

Thomas Butler
Secretary

Minutes of a Special Meeting of the Stockholders of the New Jersey and Pennsylvania Concentrating Works, held at the Laboratory of Thomas A. Edison, Orange, N.J. at 3rd P.M. November 4th 1889.

Present Messrs. Edison, Sewell, Perry, Livor, Tate and the Secretary, Mr. Butler. The President, Mr. Edison in the Chair.

The Secretary presented a waiver of notice of the meeting of which the following is a copy:-

We, the subscribers, being all the Directors and stockholders of the New Jersey and Pennsylvania Concentrating Works, do hereby waive notice of the time and place of the Directors' and Stockholders' meetings of the said Company to be held for the purpose of considering and taking action upon the question of increasing the capital stock of the said Company to the extent of $120,000, that is to say, from $30,000, the present capital, to $150000, the proposed future capital, and do fix the fourth day of November, 1889, at 3 o'clock in the afternoon, at the office of the company, in Orange, New Jersey, as the time and place of the said meetings.

Dated Orange, N.J. November 4th, 1889.

Thomas A. Edison
A. O. Tate
Samuel Insull
W. S. Perry
R. L. Cutting
H. M. Leeds
J. Hutchinson

The Secretary also presented a list of the present stockholders of the Company, showing the number of shares of the Company's stock held by each and the number of votes to which each stockholder was entitled, which was ordered filed.

Mr. Tate presented a proxy from Mr. R. L. Cutting to vote his stock at this meeting, which was also ordered filed.

On motion of Mr. Insull the reading of the minutes of the last meeting was dispensed with.

On motion of Mr. Insull, duly seconded, the following resolution was then unanimously adopted;

Resolved that it is the sense of this meeting that the capital stock of this Company should be increased from $30,000. to $150,000. and that the officers of the Company are hereby instructed to take

(Pursuant to the resolution of the Board of Directors of July 28 1892 (page 23) not having been called upon)

the necessary steps to make such increase; and be it further

Resolved that the privilege of subscribing for such increase be in the first instance offered by the officers of the Company to the stockholders thereof, pro rata, under such restrictions and conditions as the officers of the Company or the Board of Directors may deem necessary, and that if all the stock thus offered be not taken by the stockholders of the Company as aforesaid, the untaken increase shall be disposed of, but at not less than par, at such time or times and in such way as the Board of Directors of the Company may determine; and be it further

Resolved that the Board of Directors are hereby requested, if they deem it wise to do so, to so arrange the payments on account of subscriptions to the increased capital as to permit the issuing of fully paid certificates upon the payment of each call, that is to say, that instead of issuing instalment receipts and delaying the issue of fully paid certificates until the entire capital stock is paid up, the fully paid certificates of stock be issued for the amount of the calls

as made.

On motion the meeting then duly adjourned.

Thomas Butler
Secretary.

Minutes of the Annual Meeting of the Stockholders of the ~~Stockholders~~ New Jersey & Pennsylvania Concentrating Works, held at the Laboratory of Thomas A. Edison, Orange, N. J., at three o'clock, P. M., January 8th, 1890, for the election of five (5) Directors to serve for the ensuing year, and the transaction of such other business as the Stockholders might deem necessary.

No Notice

Present,

Messrs. Thomas A. Edison, Pres.
Saml Insull Vice Pres. & Treas.
H. M. Livor, Genl Mngr.
A. O. Tate
W. S. Perry
R. L. Cutting
Chas. Batchelor

The meeting was organized by the election of Mr. Thomas A. Edison as Chairman, and Mr. Thomas Butler as Secretary of the meeting.

The meeting then proceeded to the election of two Inspectors of Election, and Messrs. Chas. Batchelor and A. O. Tate were chosen as such Inspectors.

Mr. Edison then nominated the following persons to serve on the Board of Directors for the ensuing year.

Messrs Thomas A. Edison
H. M. Livor,
Samuel Insull
W. S. Perry.
R. L. Cutting

seconded by Mr. Samuel Insull.

The polls were then declared open for the reception of votes.

After canvassing the votes the Inspectors reported that five hundred and eighty eight (588) votes had been cast (representing the total amount of Stock with the exception of twelve (12) shares held by Mr. Hutchinson) and that the above named persons were thereby unanimously elected as Directors.

The Balance Sheet of January 1st. 1890. was then presented by the Treasurer. Mr. Insull, for the consideration of the Stockholders.

There being no further business the meeting adjourned.

Thomas Butler
Secretary.

Minutes of a meeting of the Board of Directors of the N.J. & Pa. Concentrating Works, held at the Laboratory of Mr. Thomas A. Edison, Orange, N.J. January 8th, 1890.

Present.

Messrs. Thomas A. Edison,
Samuel Insull,
H. M. Livor,
W. S. Perry, and
R. L. Cutting.

Mr. Thomas A. Edison in the Chair, and Mr. Thomas Butler acting as Secretary of the meeting.

Proposed and seconded that the minutes of the preceding meeting be confirmed. Carried

Directors see above

Stockholders elect Officers not the directors

See By Law 4 & 10

The meeting then proceeded to the election of Officers for the ensuing year, with the following result:

Mr. Thomas A. Edison. Pres.
" Samuel Insull, Vice Pres.
" W. S. Perry, Treasurer.
" Thomas Butler, Secretary
" H M Livor Gen Man

Considerable discussion arose on the subject of the management of the Colbert mine, more especially with

regard to the absence of proper returns of Concentrate. Mr. Ivor, the General Manager, explained that it was not possible to furnish accurate daily returns, but undertook to instruct the Superintendent to forward to the Secretary, Mr. Thomas Butler, 44 Wall St. New York, approximate daily returns of the number of trucks of Ore delivered by the mine to the Mill; and that each week these approximate returns should be rendered in further detail, giving the gross number of cars delivered by the Mine to the Mill, the yield of Concentrate, and the percentage of each days product.

Thomas Butler
Secretary

Minutes of a special meeting of the Board of Directors of the New Jersey & Pa. Concentrating Works, held at the Laboratory of Thomas A. Edison, Orange, N. J., on Thursday, May 8th, 1890 at 3 P. M.

Present:- Messrs. Thomas A. Edison, H. S. Perry, R. L. Cutting, H. M. Ivor and Samuel Insull.

Mr. Thomas A. Edison in the Chair.

Mr. Thomas Butler Secy. of the meeting.

The minutes of the previous meeting were read by the Secretary & adopted.

On motion of Mr. Samuel Insull, seconded by Mr. H. S. Perry, it was,

Resolved, that the Attorneys for the Company, Messrs. Eaton & Lewis, be and they are hereby authorized to take the necessary legal steps to increase the Capital of the Company from $150,000 to $250,000.

The Resolution being put by the President of the meeting, was declared to be unanimously carried

It was also

Resolved, that the Treasurer and General Manager for the time being be and they are hereby authorized to call up such increased Capital of $100,000 at such times and in such manner as they may deem expedient, and the Officers of the Company are

and that effort be made to obtain notes on resolution date to call such notes matured

hereby authorized to execute all necessary legal documents for the purpose of giving effect to this Resolution.

Considerable discussion took place with reference to the powers vested in Mr. H. M. Livor, as General Manager, more especially with reference to the general business of the Company.

It was moved by Mr. Samel Insull, and seconded by Mr. H. S. Perry that all powers vested in the General Manager, whether under the By-laws or by Resolution be and are hereby abrogated except so far as relates to the building and running of this mill and any other mill which may be erected hereafter.

Thomas A. Edison
Secretary

Minutes of a special meeting of the Board of Directors of the N. J. & Pa. Concentrating Works, held at the Laboratory of Thomas A. Edison, Orange, N. J., on the 18th day of July, 1890, at 3:30 P. M.

Present: Thomas A. Edison, the President and Messrs. Cutting, Insull, Perry and Livor.

The President, Mr. Edison, in the Chair.

Upon motion of Mr. Insull, duly seconded by Mr. Cutting, Mr. Perry was elected Secretary pro tem of the meeting.

The minutes of the last meeting were then duly read by the Secretary and approved.

Mr. Insull then submitted to the meeting a report from Mr. Edison as to the progress made in the work under way at the Ogden Mine, which was read and ordered filed.

The following is a copy of this report:

"Report of Mr. Edison on Mill and property at Ogden"

July 16. 1890

The mine at Ogden now shows a face of about 220 feet; from the indications of the

needle I think we shall undoubtedly get a face of 300 feet. There is a barren part in the middle of the breast, but Mr. Connolly thinks the ore will go under it. Even if it didn't it wouldn't matter much, as it would only reduce the breast from 300 to 270 feet. The last time I was at the Mine I went up to the Davenport property; this claim is even better than the Lehigh; where we are now working I think we shall be able to get a breast 350 feet wide, and in places very much wider. The average richness of the Ore on the 225 feet breast is about 22 per cent metallic iron or 28 per cent of ore. As I find on investigation that the ore has weathered considerably on top - I feel convinced that at a depth of 75 feet the richness will reach 25 per cent metallic iron.

I have also gone over the Ogden property, which is about 2,000 feet long; at the extreme end ore occurs in enormous quantities, and it seems to be a better quality than the ore now mined by us. It is also very favorably located for mining in open cut, being on a high hill. This will be a good locality for the second mill. The Central Railroad can easily be extended to the mill; they will doubtless

do this at their own expense.

Negotiations are in progress to get a lease from Delamp, and also the extension of the Ogden Mine towards Sparta.

At the extreme end is the N.J. Iron Mining Co. mines, which I bought for $1,500 in fee simple, and which I believe has been transferred to the Company or is intended to be. The range will then be two miles long, and not less than fifty millions tons of crude ore can easily be mined before too great a depth is reached.

The Mill.

The large engine at the mill is running as well as could be expected. The bearings warm up occasionally and give some trouble but these will soon wear down and the engine will do the work all right. The power of the engine is more than ample to run the mill. To determine the actual power required to run the mill empty and the various sections loaded Mr. Cover has ordered indicators for the engine as well as the necessary rigging to make the test. The Engine

Room is certainly the best equipped and will be the most economical steam plant in the United States.

The Mill proper considering the problems to be solved in so large a mill is admirably arranged; not a single mistake has been made that I can detect, and nothing has been altered so as to render discarding machinery or material necessary. The capacity has been very much underrated. It was supposed that with three rows of Rolls the capacity would be 600 tons in 20 hours. I feel certain that it will reach 900 tons, and now that we put up the Refining Mill, thus releasing the fourth row, the capacity will be 1,200 tons. The large Crusher has been tested and easily does that amount of work. One section of the Mill also was run and worked more than satisfactorily My impression is that the wear and tear will be small. The Separators were tested and at first did not give very good results, as the adjustments were predicated upon tests made at the Laboratory on selected samples;

but by experimenting in a somewhat new condition I obtained astonishing results. The Separators were supposed to be capable of 200 tons per day of 24 hours, whereas they will do easily 530 tons each in 20 hours or 1,590 tons will pass through the first three and the other three (3) will only have to pass two-thirds of that amount.

The first concentration took out 15½ units of the 23 in the ore, leaving 7½ units in the tailings. These running through the Tailing Separators removed 6⅝ units of the 7½ leaving only 1 7/100 in the tails. There will be no use trying to get this 1¼ units, as 18 tons of crude ore, costing crushed, only $9 will release it. We could only save $9 anyway per day. The concentrate made by the first operation owing to the fineness of the ore is about 58 per cent; those from the tailings about 49; both together making a 55 per cent ore. This is higher than the average richness of New Jersey ores, but it will not be Bessemer ore, and carries too much silica

to permit us to get a higher price than 8 cents per unit. We shall probably make 400 tons of this ore daily 300 days in the year, after the mill is running well and the mine properly opened, which would £4.40 per ton, or $1760 per day. But if we erect the Refining Mill we can raise the units to 69 or 70 per ton from 55. This of itself would raise the price to nine cents per unit or 55 cents per ton more at a cost of about ten cents, leaving 45 cents profit on 400 daily, or $54.000 per year more profit. But as the ore will be nearly pure and be a Bessemer, we can get 11 cents per unit or 2 cents more which is 110 per ton more or an extra profit of $132.000 per year.

In addition to this we will be the only concern in the United States which can furnish on order a pure Bessemer ore of 69 or 70 per cent. I have made a rough estimate with the assistance of Mr. Cloor which is entirely on the safe side of the cost of the Refining Mill, and Storage Bins to permit the storage of 8.000 tons, of 55 per cent. These Bins per-

mit us to start the mill at once making concentrate without waiting for the completion of the Refinery.

The estimated cost of the Refinery is $53.721, ata itemized account of which is appended.

Regarding the leasing and surveys of other mines in New Jersey, the work is going on rapidly and options will I think be obtained on 90 per cent of the available mines in New Jersey before the snow flies.

I am having some surveys made near Bechtelville, with the view of moving the Bechtelville Mill, which is now ready to be moved. Mr. Gilbert has been ordered to Scrub Oak Mine, N.J., on which we have a lease to start the Diamond Drill. The magnetic survey shows a very large deposit of ore.

(Signed) Thos. A Edison.

Estimate of Refining Mill proposed.

One 300 H. P. Engine	$4.667.
Foundation	350
One 146 H.P. B & W Boiler	2.300
Setting to Engine	500
Piping to Engine	1.500
Jet Condenser and aux. Air Pump	1.087

Piping for same	$350
Belting for dynamo	500
Dynamo	2,400
Electrical apparatus, wiring etc	500
Hire to Building	600
Soles and erection	250
Wiring building for lights	
Hang Lights, sockets, shades, switches and Belt Machine	650
Hire Rope pulleys.	1,000
Wire Rope	800
Shafting for Grinders	800
Shafting for Belt Machine	800
Bevel Gears for Grinders	650
Driving Belting for Belt Machine	350
Countershaft for belt machines	500
Labor putting up drawing machines	1,000
One 10 x 20 Crusher	1,800
Belting for "	100
Foundation "	100
6 Rolls	3,918
Bevel wheels	160
Pedestals for 6 Rolls	360
Conveying Belt in new mill	700
Rigging for Belt Guide, idlers,	175
Belt Machine on Belt Machine	1,200
Tailing Belt	150
2 Elevator Bucket Machines	500
12 Belt Machines	6,144
Storage House complete	2,500
Building	7,000
Carson's fire Big Building	168
1 Roll Screen	457
2 Fourteen mesh Screen Plates	475
Shaft 4 Bores extra for Screens	160
4 Fifty mesh Screens with Shaft Bores	2,300
Freights,	1,500
Total.	$53,721.

A financial statement was then submitted to the meeting by the Treasurer and after being read, was duly approved and ordered filed.

Mr. Insull then offered the following resolution:

Resolved, that Messrs Eaton & Lewis, the Attorneys of the Company, be and they are hereby authorized to take the

necessary steps for the purpose of further increasing the Capital of this Company from $250,000 to $350,000, and that the proper Officers of the Company be and ~~they~~ hereby are authorized to execute all the certificates or other legal documents necessary to that end.

The resolution was seconded by Mr. Cutting, and upon being put to the meeting, was unanimously adopted.

The President then authorized the General Manager to order the necessary material for the further extension of the Company's plants.

Mr. Insull then offered the following resolution:

Resolved, that the Treasurer and General Manager of the Company be and they hereby are authorized to make calls on account of the increased Capital not yet called, at such times, and in such amounts as they may deem expedient, and to the extent of making the total paid up Capital of the Company $300,000, the intention being that a balance of $50,000 shall remain still

uncalled.

There being no further business the meeting adjourned,

Thomas Butler.
Secretary.

Minutes of a special meeting of the Board of Directors of the New Jersey and Pennsylvania Concentrating Works, held at the Laboratory of Thomas A. Edison, Orange, N. J., on the 22nd day of December, 1890, at 4 P.M., pursuant to the following notice which was mailed to each Director, and to the other stockholders with a request to be present.

The Notice

Notice is hereby given that a special meeting of the

—Minutes of a Special meeting of the Board of Directors of the New Jersey and Pennsylvania Concentrating Works, held at the office of Samuel Insull, Edison Building, No. 42 Broad street, New York, on the 13th. day of December 1890, at 11.30 A.M., in pursuance of a notice mailed to each of the Directors, and to the other shareholders, with a request to be present.

Edison, President
Thomas Butler, Sec'y
Article 2

—— The Notice. ——

Dear Sir:—

—— A Special meeting of the Directors of this Company is called for Saturday morning next, December the 13th. at 11.30, o'clock, at the office of Samuel Insull, Edison Building Broad street, New York.

By order.

Samuel Insull
Says by order of President

Thomas Butler
Secretary

New York December 11th. 1890.

— There were present:—

Thomas A. Edison
Samuel Insull
R.L. Cutting
W.S. Perry
H.M. Levin

and Thomas Butler, Secretary.

—Proposed and seconded that the minutes of the preceding meeting be confirmed. Carried.

—The Secretary having read the Notice calling the Meeting together, Mr Thomas A. Edison (President) was unanimously

called to the Chair.—

—The question of increasing the royalty from 15¢ to 25¢ per ton of Concentrates was brought up by W.S. Perry, who read the following draft letter which it was proposed should be addressed to the Edison Ore Milling Company on the subject.

—

New York, N.Y. December 12th 1890.

W.S. Perry, Esq., Secretary,
Edison Ore Milling Company, Limited,
New York City.

Dear Sir:—

Referring to the agreement entered into between your Company and this, dated November 15th 1889, more particularly to the second article thereof, whereby this Company covenants to pay to your Company 15¢ per ton on all Concentrates separated by the letter, and referring further to the fourth article in the said agreement, under which this company is to pay your Company a minimum royalty during the year 1890, of $2.000.; I am authorized by my board to request an extension of the time for payment of Royalties, until such time as the new Mill, at Ogden, now rapidly approaching completion, shall be in full working order.

That there may be no misunderstanding, I am directed to say, that this

application is in no sense intended as one to relieve this Company of its obligations, but simply to defer them, as indicated.

As I understand that your Company will shortly be holding its regular Quarterly Meeting, I beg to request that you will bring this matter before your Board, with the view of obtaining their authority to the extension of time for payment of Royalty as desired.

At the same time, I am to inform you that this Company, (in the event of your Company granting the above concessions,) would be prepared to entertain a modification of the Agreement, of November 18th 1889, in so far as relates to the future payment of Royalties payable, as and from, the first day of January, 1891, that is to say, this Company will agree to pay a Royalty of 25¢ per ton of Concentrate, in lieu of the 15¢ agreed to be paid, under the second Article of said Agreement before referred to.

Yours truly.

— After considerable discussion authority was given to the Secretary to send this letter as drafted — to the Edison Ore Milling Company.

— A lengthy discussion took place with regard to the best means for extinguishing fire at the Ogden Mill — after

which it was proposed by Mr R. L. Cutting, seconded by Mr Samuel Insull that the decision as to the best means to be adopted be left with full power to the President — Mr Thomas A. Edison —

— It being stated that the authority of the Treasurer and General Manager only permitted them to make calls on the Capital of the Company up to $300.000.00/100, and as that limit had almost been reached, and further funds would be required, it was, on motion of Samuel Insull, seconded by R. L. Cutting

Resolved:- That the Treasurer and General Manager of the Company be and they are hereby authorized to make calls on the unpaid Capital of the Company, at such times, and in such amounts as they may deem expedient, an additional $50.000.00/100 to the extent of increasing the total paid up Capital of the Company to $350.000.00/100.

— There being no other business before the meeting, after a vote of thanks to the Chairman, the meeting stood adjourned.-

Thomas Butler
Secretary.

Minutes of the Annual Meeting of the Stockholders, of the New Jersey and Pennsylvania Concentrating Works, held at the Laboratory of Thomas A. Edison, Orange, New Jersey, on Wednesday, the 14th day of January 1891, at 3.30 o'clock P.M., in pursuance of the following notice, mailed to each stockholder on the 2nd January 1891.

(The notice)

"Dear Sir:-

I beg to inform you that:-

The Annual Meeting of the Stockholders of the New Jersey & Pennsylvania Concentrating Works, for the election of five Directors to serve for the ensuing year, and for the transaction of such other business as may come before the meeting, will be held at the office of the Company, at the Laboratory of Thomas A. Edison, Orange, N. J. Wednesday, January 14th 1891, at 3.30 o'clock P.M.

(Signed) Thomas Butler,
Secretary."

There were represented by proxy, in the person of Mr Thomas Butler, the following:-

Mr Thomas A. Edison	925	Shares
" Samuel Insull	220	"
" R. L. Cutting	843	"
" N. S. Perry	220	"
" H. M. Lyon	260	"
Total.	2468	

Mr Thomas Butler in the chair, and acting as Secretary.

The Meeting then proceeded to the election of Directors for the ensuing year.

The Chairman appointed Mr John H. Randolph and Mr J. Masquire tellers of the election, and the poll declared open. Upon a ballot being taken the tellers reported that 2468 votes had been cast for Thomas A. Edison, R. L. Cutting, Samuel Insull, N. S. Perry, and H. M. Lyon, who were then duly declared elected Directors for the ensuing year, by the Chairman.-

The election of Officers was then proceeded with, and upon nomination and ballot, the following were unanimously elected:-

Mr Thomas A. Edison, as President.
Mr Samuel Insull, as Vice-President.
Mr N. S. Perry, as Treasurer.
Mr Thomas Butler, as Secretary.

Mr H. M. Lyon, was chosen General Manager.-

The Balance Sheet to the 31st December 1890, was presented, and ordered to be filed.

There being no further business the meeting adjourned.

Thomas Butler
Secretary.

Minutes of a special Meeting of the Board of Directors of the New Jersey and Pennsylvania Concentrating Works, held at the office of the Company, Edison Laboratory, Orange N.J. on Saturday the second day of May 1891., at the hour of 2.30. P.M.

The Secretary presented a waiver of notice of the meeting of which the following is a copy:-

We, the subscribers, being all of the Directors of the New Jersey and Pennsylvania Concentrating Works, do hereby waive notice of the time and place of the directors' meeting of the said Company to be held for the purpose of considering and taking action upon the question of increasing the Capital Stock of the said Company to the extent of $150.000., that is to say, from $350.000., the present capital, to $500.000., the proposed future capital, and do fix the 2nd day of May 1891, at 2.30 O'clock in the afternoon, at the office of the Company, in Orange, New Jersey, as the time and place of the said meeting.

Dated, Orange, N. J., May 1st 1891.

(and signed)

Thomas A. Edison.
Samuel Insull.
R. L. Cutting.
W. S. Perry.
H. M. Loir.

There not being a quorum the meeting was formally adjourned to Monday, the 4th day of May 1891, to take place at the office of Mr Samuel Insull, in the Edison Building, Broad Street, New York, at the hour of 2.30 in the afternoon.

Thomas Butler.
Secretary pro tem.

Minutes of adjourned meeting of the Board of Directors of the New Jersey and Pennsylvania Concentrating Works, held in the office of Samuel Insull, Edison Building, Broad Street, New York, Monday May 4th 1891, at the hour of 2.30 o'clock in the afternoon.

Present:- Messrs Thomas A. Edison, President, Samuel Insull, Vice President, W. S. Perry, Treasurer, H. M. Loir, General Manager, R. L. Cutting, and Stockholders, Charles Batchelor and Joseph Hutchinson.

The Secretary read notice calling the meeting.

On motion Thomas A. Edison took the chair.

The minutes of meeting of the 2nd May were read and on motion were confirmed.

On motion the following resolution was unanimously adopted.

Resolved, that it is the sense of this meeting that the capital stock of this Company, should be increased, and the same hereby is increased, from $350,000., its present capital, to $500,000., and that the officers of the Company be and they hereby are authorized and instructed to take the necessary steps to make such increase and to execute any and all

certificates or other legal documents requisite to that end; and be it further

Resolved, that the privilege of subscribing for such increase be in the first instance offered by the officers of the company to the stockholders thereof, pro rata, under such restrictions and conditions as the officers of the Company or the Board of Directors may deem necessary, and that if all the stock thus offered be not taken by the stockholders of the Company as aforesaid, the untaken increase shall be disposed of, but at not less than par at such time or times and in such way as the Board of Directors of the company may determine; and it is further

Resolved, that the Board of Directors are hereby requested, if they deem it wise to do so, to so arrange the payments on account of subscriptions to the increased capital as to permit the issuing of fully paid certificates upon the payment of each call, that is to say, that instead of issuing instalment-receipts and delaying the issue of fully paid certificates until the entire capital stock is paid up, the fully paid certificates of stock be issued for the amount of calls as made.

See resolution below

A long discussion took place with reference to the remuneration to be made to Mr. H.M. Lovis, General Manager, for past and future services, which resulted in the following resolution, being adopted:-

Moved by Mr. R.H. Coulting, seconded by Mr. Thomas T. Tolson, and

Resolved, that Mr. Lovis, having offered this Board to take for his remuneration for past services and expenses the sum of twelve thousand five hundred dollars ($12,500.00) be it therefore

Resolved, that this Board accept Mr. H.M. Lovis offer to take twelve thousand ~~dollars~~ five hundred dollars as payment in full of all claims and demands against this Company for services and expenses to the first day of May 1891, said sum to be applied to the payments due or to become due on any stock allotted to Lovis. If on January 1st 1892, there should be any money due Lovis and no more assessments on stock are to be made, Lovis to be paid balance due in cash. With regard to future remuneration Mr Lovis to receive ~~six~~ hundred and twenty five dollars ($625.00) per month so long as he remains in the employ of the Company.

See resolution below

Moved by Mr Samuel Sutcliffe, seconded by Mr Thomas T. Tolson, and carried,

That a salary of ~~two~~ hundred and fifty dollars ($250.00) per month be paid to the Treasurer, Mr. W.S. Perry, dating from the 1st January 1891, to be applied to payment of any assessment on stock remaining unpaid.

On motion duly moved and seconded it was

Resolved, that the Treasurer and General Manager be and they hereby are authorized to make calls on the unpaid capital of the Company, at such time and in such amounts as they deem expedient an additional fifty thousand dollars ($50,000.,) to the extent of increasing the total paid up capital of the Company to $400.000.00. And it is further,

Resolved, that the action of the Treasurer and General Manager in anticipating the above authority in making the calls of April 26th 1891, and May 1st 1891, for $10,000., each is hereby approved and confirmed.

There being no further business the meeting adjourned.

Thomas Butler
Secretary.

Minutes of a Special Meeting of the Board of Directors, held at the office of Mr R.F. Cutting, No 19 William Street, New York City, at the hour of one o'clock P.M. on the 21st day of May 1891. -

Mr W.S. Perry, acting Secretary, presented a waiver of notice of the meeting, of which the following is a copy:-

"We, the Directors of the New Jersey and Pennsylvania Concentrating Works, do hereby fix the twenty first day of May, 1891, at one o'clock P.M., on such day at the office of R.F. Cutting, No 19, William Street, as the time and place for holding a special meeting of the Directors, and do hereby waive any and all notice of the same."

May 21st 1891."

and signed.

Thomas A. Edison.
Samuel Insull.
W.S. Perry.

Present:- Messrs Samuel Insull, Vice-President, W.S. Perry, Treasurer, and R.L. Cutting -

Mr. Samuel Insull, Vice P. in the chair.

Mr. W.S. Perry, acted as Secretary.

The Secretary reported that the property known as the Ogden Mine, and owned by the Ogden Mining Company of New Jersey, had been offered to Mr T.A. Edison, for the sum of $75.000.00 Tons.

On motion, duly moved, seconded and carried. Resolved:-

That Mr Edison, be and hereby is authorized to purchase the said property for this Company.

And be it further Resolved:-

That the purchase money being payable on the first day of June, pros. the proper officers of the Company, be, and are hereby authorized to call the remaining uncalled Capital, or as much thereof as is necessary, and to issue full paid stock at par for the amount so called.

And be it Resolved:-

That when said call has been made, if any Stockholder neglect, or fail to pay for and take his quota of Stock, the Treasurer is hereby authorized to sell said stock for account of said stockholder,

two days after said call shall become due and payable, at not less than par.

On motion Resolved:-

That the President and Secretary of the Company, be and they hereby are authorized to execute the Contract with the Edison Ore Milling Company, Limited, as modified by resolution of this Board, at special meeting of December 31st 1890, and accepted by the Edison Ore Milling Company; said modified agreement to be marked "B", and filed with the papers of the Company.

On motion the meeting adjourned.

Minute of a special Meeting of the Board of Directors, held at the office of the Company, room 7, fifth floor, Edwin Building, No. 144 Broad street, at the hour of one o'clock P.M., on Wednesday the 24th day of June 1891.

Present:- Messrs R.H. Cutting, Samuel Insull and W. S. Perry

Mr Samuel Insull, Vice Pres. in the chair.
Mr W.S. Perry acted as Secretary.

Resolved.- That Mr A.O. Tate, in the absence of the Secretary of the Company Mr. Thomas Butler, be and is hereby appointed assistant secretary, with authority to attest such legal documents as it may be necessary, during the absence of Mr Butler, for the President to execute.

On motion the meeting adjourned.

Minutes of Special Meeting of Board of Directors of the New Jersey and Pennsylvania Concentrating Works, held at the office of the Company, room 7, fifth floor, Edwin Building, 144 Broad street, New York City, on Monday, the 29th day of June, 1891, at one o'clock P.M.

Present:- Samuel Insull, Vice President, Messrs R.H. Cutting, H.M. Loring, W.S. Perry and by invitation, Stockholders Messrs J. Hutchinson and A.O. Tate

The Meeting was organized with Mr Insull, the Vice President in the chair. Mr A.O. Tate was appointed Secretary of the Meeting.

The Secretary presented an acceptance of waiver of notice in the following form:-

"We, the Directors of the New Jersey and Pennsylvania Concentrating Works, do hereby fix the twenty-ninth day of June, 1891, at one o'clock P.M., on such day at the office of the Company Room 7, fifth floor, Edwin Building, No. 144 Broad street, New York City, as the time and place for holding a special meeting of the Directors, and do hereby waive any

any and all notice of the same
June 29th 1891.
(Signed) W.D. Perry
A.M. Lyon
Samuel Insull
R.L. Cutting
Thos A. Edison

There is no mention of the acceptance of the resignation of Mr Lyon as the office work was to be carried on as before here.

Mr A.M. Lyon presented his resignation as General Manager of the Company to take effect immediately and upon motion by Mr Cutting, seconded by Mr Perry, the same was accepted and the officers of the Company were instructed to pay Mr Lyon's salary up to the 1st day of August 1891.

Mr Insull reported to the Board that he had addressed a letter to the employees at the Ogden Mills to the effect that as Mr. Lyon had resigned his position as General Manager, Mr Henry Hart had been placed in charge of the Ogden Works and would enter upon his duties immediately. Upon motion of Mr Cutting, seconded by Mr Perry, it was

Resolved.- That the action taken by Mr Insull with relation to notifying the employees at Ogden of Mr Lyon's resignation and the appointment of Mr Hart to take charge of

the Works, be and is hereby confirmed.

Upon motion the meeting adjourned.

August 31st 1891.

A special meeting of the Board of Directors of the New Jersey and Pennsylvania Concentrating Works, was called for this day, by the following notice

"New York August 17th 1891.

"Dear Sir:

There will be a special meeting of the Directors of the New Jersey and Pennsylvania Concentrating Works, held at this Office on Monday the 31st inst., at 11. A.M.

Yours truly
(Sign'd) W.D. Perry
Treasurer

There not being a quorum the meeting did not take place.

Minutes of a special meeting of of the Board of Directors of the New Jersey and Pennsylvania Concentrating Works, held at the office of the Company, at Orange, New Jersey, on the 31st day of August. 1891, at 3 o'clock in the afternoon.

Copy of notice calling meeting.

New York August 24th 1891.

"A special meeting of the Board of Directors of the New Jersey and Pennsylvania Concentrating Works will be held at the Office of the Company, at the Laboratory of Thomas A. Edison, Orange, New Jersey at 3. P.M. August 31st. 1891. for the purpose of considering and taking action upon the question of increasing the Capital Stock of said Company to the extent of $100.000., that is to say, from $500.000., the present Capital, to $600.000., the proposed future Capital."

(Signed) Thomas Butler
Secretary.

Present:- Messrs Edison, Insull, Perry and Batchelor.

The President, Mr Edison in the chair.

The Secretary read the notice calling the meeting.

The minutes of the meeting of June 29th, 1891, were read and on motion duly approved.

Mr Batchelor was elected a Director to fill Mr Linn's vacancy.

On motion of Mr Insull the following resolutions were unanimously adopted:

Resolved, that it is the sense of this meeting that the capital stock of this Company should be increased from $500.000., to $600.000., and that the officers of the Company are hereby instructed to take the necessary steps to make such increase; and be it further

Resolved, that the privilege of subscribing for such increase be in the first instance offered by the officers of the Company to the stockholders thereof, pro rata, under such restrictions and conditions as the officers of the Company or the Board of Directors may deem necessary, and that if all the stock thus offered be not taken by the stockholders of the Company as aforesaid, the untaken increase shall be disposed of, but at not less than par, at such time or times and in such way as the Board of Directors of the Company may determine; and be it further

Resolved, that the Board of Directors are hereby requested, if they deem it wise to do so, to so arrange the payment on account of

subscriptions to the increased capital as to permit the issuing of fully paid certificates upon the payment of each call, that is to say, that instead of issuing instalment receipts and delaying the issue of fully paid certificates until the entire capital stock is paid up, the fully paid certificates of stock be issued for the amount of the calls as made: and be it further

Resolved, that the officers of the Company be and they are hereby authorized and instructed to issue the entire amount of said increase of capital stock, being one thousand shares, at once.

On motion of Mr Insull, duly seconded by Mr Perry, the following additional preamble and resolution were then unanimously adopted:

Whereas, this Board has this day passed resolutions to increase the capital stock of this Company from $500.000., to $600.000., and has instructed the officers of the Company to issue the entire amount of said increase at once, and has also instructed the said officers to offer to the stockholders the privilege of subscribing under such restrictions and conditions as the officers or this Board may deem necessary;

Now, Therefore, Be it

RESOLVED, that the privilege of subscribing to shares (#) of said increase shall be at once offered to the present stockholders of record, pro rata, at par, on condition that such offer be availed of and said stock be paid for in full by the stockholders, severally, within ten days from the date of said offer, in default whereof all right on the part of defaulting stockholders to participate in said offer shall terminate, and said stock thus defaulted in shall be considered as stock not heretofore offered.

There being no further business the meeting adjourned.

Thomas A. Edison
Secretary.

Minutes of a special Meeting of the Board of Directors of the New Jersey and Pennsylvania Concentrating Works, held at the office of the Company, at the Laboratory of Thomas A. Edison, Orange, N.J. on Monday the 26th day of October, 1891, at the hour of 3 P.M.

The Secretary read the notice convening the meeting of which the following is a copy:

Dear Sir:-

A special meeting of the Board of Directors of the New Jersey and Pennsylvania Concentrating Works is called for Monday the 26th day of October, 1891, to be held at the office of the Company, at the Laboratory of Thomas A. Edison, Orange, New Jersey, at 3 P.M. for the purpose of considering the advisability of and taking the necessary action to increase the Capital Stock of the Company to the extent of $150,000. that is to say, from $600,000. the present Capital, to $750,000.

There being no quorum, the meeting was adjourned to Monday, Nov. 2nd, 1891, at 3.30 P.M. to be held at the same place.

Thomas A. Edison
Secretary.

Minutes of Directors meeting, adjourned from 26th day of October 1891, to this date Monday November 2nd 1891, held at the Laboratory of Thomas A. Edison, Orange, New Jersey, the office of the Company, notice for which was duly issued.

There not being a quorum the meeting was formally adjourned to Monday, the 9th day of November 1891. to be held at the office of the Company, at the Laboratory of Thomas A. Edison, Orange N. J. at 3.30. P.M.

Thomas Butler
Secretary.

Minutes of Directors meeting, further adjourned from November 2nd 1891, to this date, November, 9th 1891, held at the office of the Company, at the Laboratory of Thomas A. Edison, Orange, New Jersey. notice of which was duly issued.

There not being a quorum the meeting was formally adjourned to be held on call of the Secretary, at the office of the Company, at the Laboratory of Thomas. A. Edison, Orange N. J.

Thomas Butler
Secretary.

Minutes of a Special Meeting of the Board of Directors of the New Jersey and Pennsylvania Concentrating Works, duly adjourned from the 9th day of November, 1891, held at the office of the Company, at the Laboratory of Thomas A. Edison, Orange, New Jersey, on the 20th day of November, 1891, at 3 o'clock in the afternoon.

Present:- Messrs. Samuel Insull, R. L. Cutting and W. S. Perry, a majority of the Board, and Mr. Thomas Butler, the Secretary.

Mr. Insull, the Vice-President, in the chair.

The Secretary read the notice calling the meeting, which had been duly adjourned to this day.

On motion of Mr. R. L. Cutting, duly seconded by Mr. Perry, the following resolutions were unanimously adopted:

Resolved, that it is the sense of this meeting that the capital stock of this Company should be increased from $600,000. to $750,000., and that the officers of the Company are hereby instructed to take the necessary steps to make such increase; and be it further

Resolved, that the privilege of subscribing for such increase be in the first instance offered by the officers of the Company to the stockholders thereof, pro rata, under such restrictions and conditions as the officers of the Company or the Board of Directors may deem necessary and that if all the stock thus offered be not taken by the stockholders of the Company as aforesaid, the untaken increase shall be disposed of, but at not less than par, at such time or times and in such way as the Board of Directors of the Company may determine:- and be it further

Resolved, that the Board of Directors are hereby requested, if they deem it wise to do so, to so arrange the payments on account of subscriptions to the increased capital as to permit the issuing of fully paid certificates upon the payment of each call, that is to say, that instead of issuing instalment receipts and delaying the issue of fully paid certificates until the entire capital stock is paid up, the fully paid certificates of stock be issued for the amount of the calls as made; and be it further

Minutes of a Stockholders Meeting

Resolved, that the officers of the Company be and they are hereby authorized and instructed to issue the entire amount of said increase of capital stock, being one thousand five hundred shares, at once.

On motion of Mr. Cutting, duly seconded, the following additional preamble and resolution was then unanimously adopted;

Whereas, this Board has this day passed resolutions to increase the capital stock of this Company from $600.000. to $750.000., and has instructed the officers of the Company to issue the entire amount of said increase at once, and has also instructed the said officers to offer to the stockholders the privilege of subscribing under such restrictions and conditions as the officers of this Board may deem necessary;

Now, Therefore, Be it

Resolved, that the privilege of subscribing to 1500 shares ($150.000) of said increase shall be at once offered to the present stockholders of record, pro rata, at par, on condition that such offer be availed of and said stock be paid for in full by the

30 stockholders, severally within ten days from the date of said offer, in default whereof all right on the part of the defaulting stockholders to participate in said offer shall terminate, and said stock thus defaulted in shall be considered as stock not theretofore offered.

There being no further business, the meeting adjourned.

Thomas Butler
Secretary

Minutes of the Annual Meeting of the Stockholders of the New Jersey & Pennsylvania Concentrating Works, held at the Laboratory of Thomas A. Edison, Orange, New Jersey, on the 13th day of January, 1891, at 3.30 o'clock in the afternoon, pursuant to the following notice duly mailed to each stockholder.

"New York, Dec. 31, 1890.

Dear Sir:

The Annual Meeting of the Stockholders of this Company will be held at the office of the Company, at the Laboratory of Thomas A. Edison, Orange, New Jersey, on Wednesday the 13th day of January, 1891, at 3.30 o'clock P. M., for the election of five Directors to serve for the ensuing year, and the transaction of such other business as may come before the meeting.

(Signed) Thomas Butler
Secretary

Present, in person or by proxy, the following Stockholders.

Carlos H. Howard,	11 shares.
Robert L. Cutting,	1945 "
W.S. Perry,	394 "
Peter Marie,	19 "
O. J. Conley	15 "
A. V. H. Sturgeonant	31 "
E. M. Douglas,	11 "
Francis R. Upton,	136 "
L. R. Eaton,	20 "
Chas. Batchelor,	423 "
A. O. Tate,	65 "
Samuel Insull,	392 "
Thomas A. Edison,	3363 "
Thomas Butler,	3 "
	6759

Mr. Thomas Butler in the chair and acting as secretary.

The Chairman appointed Mr. Harry T. Miller and Mr. John T. Randolph tellers of the election, and the polls were declared open, for the election of Directors for the ensuing year. The names of Thomas A. Edison, R. L. Cutting, Samuel Insull, W. S. Perry and Charles Batchelor were submitted, and upon a ballot being taken, the tellers reported that 6,757 votes, all represented at the meeting, had been cast in favor of the above mentioned

6,759

gentlemen, who were then duly declared elected Directors of the Company for the ensuing year by the Chairman.

The election of officers was then proceeded with, and upon nomination and ballot, the following gentlemen were unanimously elected: Officers for the ensuing year.

Mr. Thomas A. Edison, as President.
Mr. Samuel Insull, as Vice President
Mr. W. J. Perry, as Treasurer, and
Mr. Thomas Butler as Secretary.

There being no further business, the meeting then duly adjourned.

Thomas Butler
Secretary.

Minutes of a meeting of the Directors of the N. J. Co. Carbon Works held at Edison Laboratory, Orange, N. J. Feb 20th 1894.

Present Messrs. Edison, Cutting, Perry and Insull. Mr. Edison in the chair.

In the absence of Secretary Butler Mr. Perry was appointed by the chair as Secretary pro tem. Notice of this meeting waived by the Directors.

Resolved. That it is the sense of this meeting that the capital stock of the Company be increased from Seven Hundred & Fifty Thousand to One million Dollars & that the officers of the Company are hereby instructed to take the necessary legal steps to execute such increase.

Mr Edison expressed a desire to take One hundred shares of the proposed increased stock and to give his check for the same without reference to his proportion. A motion was therefore moved by Mr. Cutting & seconded by Mr. Perry that this privilege be extended to Mr. Edison. Carried

There being no further business before the meeting it was moved and seconded that we adjourn. Carried

W. J. Perry
Secretary pro tem

Purchase 5 cent Orange & Nty others 9

Minutes of a Special Meeting of the Board of Directors held at Edison, N. J. October 15, 1894.

Present: Messrs. T. A. Edison, W. J. Perry, and R. L. Cutting.

Mr. Thomas A Edison in the chair.

Mr. Perry presented the resignation of Mr. Samuel Insull as Director and Vice-President of the Company. It was moved by Mr. Cutting and seconded by Mr. Perry that the same be duly accepted. Carried unanimously.

Mr. Perry then moved that Mr. F. R. Upton be elected a Director to fill the vacancy caused by Mr. Insull's resignation seconded by Mr. Cutting and carried.

It was then moved by Mr. Perry that Mr. Chas. Batchelor be elected Vice-President to fill the vacancy caused by the resignation of Mr. Insull, seconded by Mr. Cutting and carried

There being no further business before the meeting, it was adjourned.

Thomas Butler.
Secretary.

no official minutes of the Stockholders Meeting this date

Minutes of a Special Meeting of the Board of Directors held at Edison, N.J. October 15th, 1892.

Present: Messrs. T.A. Edison, W.S. Perry and R.L. Cutting.

In the absence of the Secretary Mr. W.S. Perry was appointed Secretary pro tem.

Mr. W.S. Perry then presented a waiver of notice of the meeting of which the following is a copy.

"We, the subscribers, being all of the Directors of the New Jersey and Pennsylvania Concentrating Works do hereby waive notice of the time and place of a special meeting of the Directors of said Company to be held for the purpose of considering and taking action upon the question of the resignation of Mr. Samuel Insull as Vice President and a Director of the Company and for the election of his successors, and for the transaction of any other business which may come before the meeting, and do fix the fifteenth day of October one thousand eight hundred and ninety-two, at two-thirty o'clock in the afternoon at Edison N.J. as the time and place of said meeting.

Dated. Edison N.J. October 14th, 1892.

(Signed) Thomas A. Edison
" W.S. Perry
" R.L. Cutting
" Samuel Insull
" Charles Batchelor."

Mr. Perry presented the resignation of Mr. Samuel Insull as Vice President and a Director of the Company: It was moved by Mr. Cutting and seconded by Mr. Perry that the same be duly accepted: Carried unanimously.

Mr. Perry then moved that Mr. E.R. Upton be elected a Director to fill the vacancy caused by Mr. Insull's resignation; seconded by Mr. Perry and carried.

It was then moved by Mr. Perry that Mr. Charles Batchelor be elected Vice President to fill the vacancy caused by Mr. Insull's resignation: seconded by Mr. Cutting and carried.

There being no further business before the meeting, it was adjourned

W.S. Perry
Secretary, pro tem

Minutes of a Special Meeting of the Board of Directors held at Orange, N.J., November 14th, 1892.

In the absence of the Secretary, Mr. Perry was appointed Secretary, pro tem.

Present: Messrs. Edison, Cutting, Upton & Perry.

Mr. Edison, President, in the chair.

Mr. Perry presented a waiver of notice of the meeting of which the following is a copy.

We, the subscribers, being all of the Directors of the New Jersey and Pennsylvania Concentrating Works, do hereby waive notice of the time and place of the Directors' meeting of the said Company to be held for the purpose of considering and taking action upon the question of increasing the capital stock of the said Company to the extent of $250,000, that is to say, from one Million Dollars ($1,000,000), the present capital to Twelve Hundred and Fifty Thousand Dollars ($1,250,000.), the proposed future capital, and do for the Fourteenth day of November, One Thousand Eight Hundred and Ninety-two

at two-thirty o'clock in the afternoon, at the office of the Company in the Laboratory of Thomas A. Edison at Orange, N.J. as the time and place of said meeting.

Dated, Orange N.J. November 13th 1892.

(Signed) Thomas A. Edison
W. S. Perry
R. L. Cutting
Francis R. Upton
Chas. Batchelor.

Mr. Edison called the meeting to order and reported that he had given orders to shut down the Works at Edison, Sussex County, New Jersey, for all winter, in order to make quite a number of changes at the Works. These changes he read to the Directors and estimated it would cost somewhere in the neighborhood of $100,000. and would take four months. After talking it over, it was decided to go ahead and make the changes, and Mr. Edison promised to send in to the office, in order to be put in the Minute Book, said estimate.

It was then discussed what was the best method of getting the capital to carry the improvements on, and it was finally decided, by all the

Directors voting in the affirmative, to increase the capital of the Company from $1,000,000. to $1,250,000., and Mr. Perry was authorized to take the legal steps towards getting such increase made.

There being no further business, the meeting adjourned.

W. Perry
Secretary, pro tem.

No Signature
No Seal

Number of Votes Cast

Mr Francis R. Upton	200	Shares in person –
Mr R. L. Cutting	2235	Shares by Proxy from Mr Pope
Mr Thos A. Edison	6079	" " " " " "
Mr Wm S. Pope	267	" in Person
Mr Thos Butler	4	" " "
Total	8785	Shares –

For Directors
Thos A. Edison
Robt L. Cutting
Lewis Batchelor
Francis R. Upton
~~William S. Pope~~

Mr Edison as President
Mr Batchelor " Vice President

For Mr. S. Pope as Secretary and Treasurer.

Directors meeting adjourned subject to call of President by Mr F. R. Upton Chairman of Stockholders Meeting.–

We certify that the above 8785 Shares were voted on this Seventh day of January 1893.

John B. Randolph
Harry F. Miller –
Tellers.

PROXY.

Const. Schmidt, Stationer, 31 and 33 Broad St., N. Y.

Know all Men by these Presents,

That I, Thomas A. Edison

do hereby constitute and appoint Charles Batchelor or W.S. Perry or A.O. Tate,

Attorney and Agent for me, and in my name, place and stead, to vote as my proxy at any election of Directors and Officers of the New Jersey and Pennsylvania Concentrating Works

according to the number of votes I should be entitled to vote if then personally present.

In Witness Whereof, I have hereunto set hand and seal at the tenth day of June 1893.

Signed, Sealed and Delivered in the presence of

Chas Batchelor

Thos A. Edison [L. S.]

ROXY.

Consé, Schmidt, Stationer, 31 and 33 Broad St., N. Y.

Know all Men by these Presents,

That I, Robert L. Cutting

hereby constitute and appoint Charles Batchelor or W. S. Perry

torney and Agent for me, and in my name, place and stead, to vote as my proxy at the election of

Directors and Officers of the New Jersey and

Pennsylvania Concentrating Works

be held January 11th 1893

ording to the number of votes I should be entitled to vote if then personally present.

In Witness Whereof, have hereunto set hand and seal at

the 10th day of January 1893

ned, Sealed and Delivered in the presence of

Saml F. Noyes

R. L. Cutting [L. S.]

Notice?

Minutes of the Annual Meeting of the Stockholders of the New Jersey and Pennsylvania Concentrating Works, held at Edison Laboratory, Orange, N.J. January 11th, 1893, at 3.30 P.M.

The meeting was called to order by Mr. F. R. Upton.

Mr. Upton nominated Mr. John F. Randolph and Mr. Harry F. Miller to act as tellers, and then declared the polls open to receive votes for five Directors and a Secretary and Treasurer, to serve for the ensuing year.

At the end of the hour the polls were declared closed and the tellers declared that 8785 votes had been cast for the following persons to serve as Directors for the ensuing year:

Thomas A. Edison
R. L. Cutting.
Chas Batchelor.
F. R. Upton.
W. S. Perry.

The same vote was cast for Mr. W. S. Perry as Secretary and Treasurer. The Stockholders then made the following selection from the Directors:

Mr. Thomas A. Edison, President.
Mr. Chas Batchelor, Vice President.

See Minutes of Annual Meeting of Officers in 1893

There being no further business, the meeting then adjourned.

There being no quorum of Directors present, there was no meeting.

W. S. Perry
Secretary.

Nov. 14, 1893.

At a special meeting of the Directors of this Company held on this date Mr. Edison proposed that the capital of this Company should be increased from $1,250,000 (one million two hundred and fifty thousand dollars) to $1,500,000 (one million five hundred thousand dollars). Seconded by Mr. W. S. Perry, it was unanimously passed. As there was no further business before the Board, said meeting was adjourned

W. S. Perry
Secretary

Memorandum of Votes cast at the meeting of the Directors of the New Jersey and Pennsylvania Concentrating Works held at the Edison Laboratory Orange N.J. on January 10th 1894

Mr W. S. Mallory	for	Mr Thos A. Edison	8314 Shares
Mr W. S. Perry	"	" R. L. Cutting	2415 "
" W. S. Perry	"	" Chas Batchelor	595 "
In person		Mr W. S. Perry	267 "
		Total	11591 Shares.

The above votes were cast for the following Officers

Mr Thos A. Edison	President
Mr Chas Batchelor	Vice President
Mr W. S. Perry	Secy and Treas.

We certify that the above is correct.

W. Mallory
John R. Randolph
Tellers.

Memorandum of Votes cast at the Annual Meeting of Stockholders of the New Jersey and Pennsylvania Concentrating Works held at the Edison Laboratory Orange N.J. on January 10th 1894

Mr W. S. Mallory for	Mr Thos A. Edison	8314	Shares
Mr W. S. Perry " "	R. L. Cutting	2415	"
" W. S. Perry " "	Chas. Batchelor	595	"
In person	Mr W. S. Perry	267	"
	Total	11591	Shares.

All the above votes were cast in favor of the following Directors:

Thos A. Edison.
R. L. Cutting.
Chas. Batchelor
~~Francis R. Upton.~~
W. S. Perry.

We certify that the above is correct.

W S Mallory
John R. Randolph
Tellers.

PROXY.

Gerry & Murray, Stationers, 31 and 33 Broad St., N. Y.

Know all Men by these Presents,

That I, Thos. A. Edison

do hereby constitute and appoint Walter S. Mallory

Attorney and Agent for me, and in my name, place and stead, to vote as my proxy at any election of Directors of the N.J. & Pa. County works

according to the number of votes I should be entitled to vote if then personally present.

In Witness Whereof, I have hereunto set my hand and seal at Orange N.J. the 6th day of January 1894

Signed, Seated and Delivered in the presence of

W. S. Mallory

Thos. A. Edison [L. S.]

PROXY.

Gerry & Murray, Stationers, 31 and 33 Broad St., N. Y.

Know all Men by these Presents,

That I. Charles Batchelor

do hereby constitute and appoint N. O. Perry.

Attorney and Agent for me, and in my name, place and stead, to vote as my proxy at any election of Directors and Officers of the New Jersey & Pennsylvania Concentrating Works.

according to the number of votes I should be entitled to vote if then personally present.

In Witness Whereof, I have hereunto set my hand and seal at the Ninth day of January, 1894.

Signed, Sealed and Delivered in the presence of

R. E. Gridley. Chas. Batchelor [L. S.]

PROXY.

Gerry & Murray, Stationers, 31 and 33 Broad St., N. Y.

Know all Men by these Presents,

That I, R. L. Cutting

do hereby constitute and appoint H. C. Gerry

Attorney and Agent for me, and in my name, place and stead, to vote as my proxy at any election of Directors and Officers of the New Jersey & Pennsylvania Concentrating Works,

according to the number of votes I should be entitled to vote if then personally present.

In Witness Whereof, I have hereunto set my hand and seal at the Tenth day of January 1894.

Signed, Sealed and Delivered in the presence of

Edwin Irving Olmsted

R. L. Cutting [L. S.]

Stockholders.

Minutes of the annual meeting of the N. J. Zinc & Iron Concentrating Works held at Edison Laboratory, Orange, N. J. Jan. 10th 1894 at three P.M.

The meeting was called to order by Mr. W. S. Terry.

Mr. Terry nominated Mr. John F. Randolph and Mr. W. S. Mallory to act as tellers, and then declared the polls open to receive votes for five Directors and a Secretary & Treasurer to serve for the ensuing year.

At the end of the hour the polls were declared closed and the tellers declared that 11591 votes had been cast for the following persons to serve as Directors for the ensuing year.

Thos. A. Edison
R. L. Cutting
Chas. Batchelor
F. R. Upton
W. S. Terry

The same vote was cast for Mr. W. S. Terry as Secretary & Treasurer.

The Stockholders then made the following selections from the Directors:

Mr. Thos. A. Edison, President
Mr. Chas. Batchelor Vice President
There being no further business,
the meeting then adjourned

W. Perry

Homestead Stat Mgr
Block Holder Real
Attorney

At a meeting of the Board of Directors held immediately after, there being no business before the Board, the meeting was adjourned.

W. Perry
Secretary

Notices were duly sent out calling a Special meeting of the Directors of the N. J. & Penna Concentrating Works to be held on Friday April 29th 94 at 2 P.M. to elect a Director to fill vacancy caused by the death of Mr. R. L. Cutting

Present:
Mr. Batchelor, Mr. Perry and Mr. Upton

The meeting was called to order by the Vice President, Mr. Batchelor, who stated why it was called.

It was proposed by Mr. Perry and regularly seconded that Mr. Walter Cutting be appointed to fill the vacancy in the Board of Directors, and he was declared elected.

It was moved and seconded that the Treasurer be appointed to draw up suitable resolutions relative to the death of Mr. Cutting and have same spread upon the minutes

Whereas, the Board of Directors of the N.Y. Concentrating Works have heard with deep regret of the sudden death of their esteemed associate and friend, Mr. R. L. Cutting,

Therefore Resolved:

That we desire to place on record our high appreciation of the ability, fidelity and integrity with which he has fulfilled the duties of Director of this Company, - Wise in counsel, - and prompt in action, the Company has profited by his untiring attention to its best interests; - As a merchant and friend, he has left a record and example we cannot forget.

There being no further business before the meeting, it was adjourned -

W. L. Perry
Secretary

New York, April 21st

19 WILLIAM STREET.

W. L. Perry, Esq.,
Treasurer &c

Dear Sir:

I hereby accept the office of Director of the N.Y. & Penn. Concentrating Works, to which according to yours of 20th inst I have had the honor to be elected -

Yours truly
Walter Cutting

Notices were sent out calling a Special Meeting of the N. J. Thomas Cone Works to be held on Friday July 27 1894 at 2 o'clock P.M.

Present - Chas. Batchelor, Walter Cutting, W. S. Ferry, J. R. Upton

The object of the meeting was to act on a letter (attached) from Mr. Edison regarding increasing the Capital Stock from $1,500,000 to $1,750,000

The meeting was called to order with Mr. Batchelor in the chair, who stated why the meeting was called. It was then moved by Mr. Ferry and seconded by Mr. Cutting that the Capital Stock of the Company be increased as above, which was unanimously carried, and the Treasurer instructed to notify the Company's Attorney to take whatever legal steps were necessary.

There being no further business before the meeting, it was adjourned

W. S. Ferry
Secretary

Effective Directors meeting the Northern Pacific Ry Co. Meeting of Vol.

Form 3.

CHARLES BATCHELOR, Vice-President.

THOMAS A. EDISON, President.

W. S. PERRY, Secy and Treas.

New Jersey and Pennsylvania Concentrating Works.

GENERAL OFFICES:
EDISON BUILDING, BROAD STREET,
NEW YORK.

EDISON OFFICE TELEPHONE, 5 B DOVER, N. J.
NEW YORK OFFICE " 239 BROAD.

EDISON, SUSSEX CO., N. J. July 26-94

Subject:

Mr W. S. Perry
Newark

Dear Sir:

you will please call a special meeting of the Board of Directors of this company, to consider the question of increasing the capital stock from $1.500.000- to $1.750.000-

Yours very truly

Thos A Edison

President

The Annual Meeting of the New Jersey Iron Concentrating Works was called to be held at Edison Laboratory, Orange, N.J. on Wednesday January 9th at 12 o'clock.

There being no quorum present there was no meeting.

W. J. Perry
Secretary

Apr. 22. 1895.

A Special Meeting of the Board of Directors of this Company having been called by the President, it was held at 12.15 P.M. on April 20. 1895 at the Company's Works @ Edison, Dussex Co. N.J.

Present:- Thos. A. Edison, Chas. Batchelor, Walter Cutting & W. S. Perry.

The President, Thos. A. Edison in the chair, called the meeting to order. The Secretary then offered the following resolution.

Resolved - That for the convenience of Mr. Edison it is desirable to move the offices of the Company to Orange, N.J. - Mr. Edison offered offices at his Laboratory free of rent until such time as the Company is on a dividend basis:- Mr. Cutting offered that resolution, and it being seconded it was unanimously passed.

The Secretary then read Mr. Upton's resignation as Director of the Company, and the same was accepted. Mr. Perry then proposed Mr. W. S. Mallory as Director to fill the vacancy. He was unanimously elected.

Mr. Perry then handed his resignation in as Treasurer of the Company to take effect on

May 1st. The same was accepted. Mr. Levy then proposed the name of Mr. Geo. F. Randolph of Orange as Inspector, and a ballot vote taken on the same and he was then declared elected. Mr. Edison moved that Mr. Levy be requested to look into the matter of increasing the Board of Directors from five to seven, to ascertain if the By Laws of the Company permits it, and if not to see if the Board of Directors can amend the By-Laws, and in what manner it can be legally done to permit of the increase.

There being no further business before the Board, the meeting was adjourned.

W. L. Perry
Secretary

No Special Meeting of Stockholders
Lo confirm the election

Orange, N. J. June 3/85.

A Special meeting of the Board of Directors of this Company, having been called, it was held at 10.30 A. M. at the office of the Company in the Edison Laboratory, Orange, N. J.

Present, Mr. Thos. A. Edison, Mr. Chas. Batchelor, Mr. H. S. Mallory, Mr. H. S. Levy.

The President Mr. Edison in the chair called the meeting to order. Mr. Mallory then read and proposed the following resolution, which was seconded by Mr. Batchelor, and unanimously carried.

Resolved, — That it is the sense of this meeting that the Capital stock of this Company should be increased, and the same hereby is increased, from $1,750,000, its present capital, to $2,000,000 and that the Officers of the Company be and they hereby are authorized and instructed to take the necessary steps to make such increase, and to execute any and all certificates or other legal documents requisite to that end; and be it further

Resolved, — that the Board of Directors are hereby requested, if they

deem it wise to do so, to so arrange the payments on account of subscriptions to the increased capital as to permit of the issuing of fully paid certificates upon the payment of each call, that is to say; that instead of issuing installment receipts, and delaying the issue of fully paid Certificates until the entire Capital stock is paid up; the fully paid Certificates of stock be issued for the amount of calls as made.

Whereas, the majority of the Stockholders would not subscribe for any portion of the proposed increase of stock, to wit, from Seventeen Hundred and Fifty Thousand Dollars to Two Million Dollars, as provided for as per Resolution of this date; and

Whereas, Thomas A. Edison President, found it necessary to sell the stock for the benefit of the Company, and to that end made the following arrangements with Jas. C. Parrish for Frederick P. Olcott, himself and others in accordance with his certain letter dated New York May 27th 1895 to Thomas A. Edison, which reads as follows:

New York, May 27th 1895.

Thos. A. Edison Esq.
New York City.

Dear Sir:-

I agree to purchase from you, on behalf of Mr. Frederick P. Olcott and myself and friends, $25,000. of the stock of the New Jersey & Pennsylvania Concentrating Works. $10,000. of this is taken by Mr. Olcott and $15,000. by myself and friends. You, on your part, agree to give us the refusal of a like amount, on the same terms upon which we make this purchase, until the third day of June. The conditions of the purchase are as follows:

For each $1,000. paid in to the Central Trust Company ten shares of stock will be delivered, and the privilege of an additional $4,000. to be paid, in whole or in part, at your option, any time after the Fourth of July next, provided that by that time you have produced 2,000 tons of briquettes, which briquettes shall have been satisfactory to two or more furnaces, for the production of Bessemer pig. Said $4,000, if paid in, to receive forty (40) shares of the same stock, smaller payments in the same proportion. It is further understood however that the subscription of this further $4,000 is not obligatory, but must be accepted or declined so soon after the fourth of

July as you call upon us for an answer.

The basis of this operation is a statement made by you to James C. Parrish, a copy of which I enclose

Very truly yours
(Sgd) James C. Parrish.

P.S. —

In the event of Mr. Olcott & my self not availing ourselves of the option on the 3rd of June, then the $25000 we have taken from carries with it only the privilege on $100000 and the term of forty days is extended to three months." —

to which Thos. A. Edison replied under date of May 27th 1895, as follows :-

"May-27th-1895.

Jas. C. Parrish Esq.
Dear Sir :-

Your letter of this date received regarding the purchase of $25,000 stock of the New Jersey and Pennsylvania Concentrating Works. and I accept the same.

Yours truly
(Sgd) Thos. A. Edison.

Resolved, that Mr. Edison's reply to Jas. C. Parrish's letter as above set forth be, and the same is hereby ratified and confirmed by this Board, and authority is hereby given the President to carry out the arrangement with Mr. Parrish & Olcott, as set forth in the letter aforesaid.

There being no further business before the Board, the meeting was adjourned.

W. L. Perry
Secretary.

The Annual meeting of the Stockholders of the New Jersey and Pennsylvania Concentrating Works was held at the Laboratory of Thomas A. Edison, Orange, N. J., on Monday June 17-1895 at ten o'clock, a. m.

The President Mr. Edison in the chair, offered the following Resolution, authorizing the increase of Directors from five to seven, changing the By-Laws to conform thereto, and also moving the office of the Company from New York City to Orange, --- which, after being duly read, was voted for with the following result: 13,256 shares or a 2/3 vote in favor of it. It was therefore unanimously carried.

The meeting then proceeded to the election of seven Directors to serve for the ensuing year. Mr. W. S. Mallory nominated R. E. Gridley and C. H. Baldwin to act as tellers, and the polls were declared open for one hour.

At the end of one hour, the polls were closed, and after canvassing the votes, the tellers announced that 13551 votes out of a total of 17400 had been cast for the following persons to serve as Directors for the ensuing year:

TO THE CHAIRMAN OF A MEETING OF THE STOCKHOLDERS OF THE NEW JERSEY AND PENNSYLVANIA CONCENTRATING WORKS :

Report of Royal E. Gridley, and Charles Y. Baldwin as Tellers of the electiom of seven directors by the stockholders of the New Jersey and Pennsylvania Concentrating Works held at the Laboratory of Thomas A. Edison, Orange, N. J., on the Seventeenth day of June, from ten o'clock to eleven in the forenoon.

WE HEREBY CERTIFY, that the hour of eleven having arrived we have counted the votes cast at the above election, and hereby declare the total number of votes cast was 13851 out of a total of 17,400 shares and that the following persons were elected directors thereby:

Thomas A. Edison
Chas. Batchelor
Jr. S. Perry
Frazier Cutting
A. H. Dyer
J. B. Randolph
Jr. S. Malony

Witness our hands and seals, this Seventeenth day of June, one thousand eight hundred and ninety-five.

Royal E. Gridley
Charles Y. Baldwin

Witness
Alexander Elliott Jr.

Thomas A. Edison,
Charles Batchelor
W. D. Terry
Walter Cutting
A. H. Dyer
John F. Randolph
W. S. Mallory.

The Stockholders then made the following selections from among the Directors to serve as Officers of the Company for the ensuing year, the same vote being given as that for the Directors

Thomas A. Edison	President
W. S. Mallory	Vice President
John F. Randolph	Secretary & Treasurer

There being no further business before the meeting it was adjourned.

Secretary

Minutes of the Annual Meeting of the Stockholders
—of the—
New Jersey and Pennsylvania Concentrating Works.

Held at the Laboratory of Thomas A. Edison, Orange, N. J. January 8th 1896 at eleven o'clock A. M.

The President Mr Edison in the chair.

Mr Chas B. Carman offered the following Resolution:-

Whereas, James L. Parrish of New York City, did, by his letter to the President of this Company under date of May 27th 1895, agree to take 250 Shares of its Stock, at par, and in said letter did ask for a refusal until June 3. 1895, of a like amount on certain terms and conditions and by virtue of said letter did pay to this Company at the office of the Central Trust Company in New York the sum of $29,500.00 and in return therefor did receive 295 shares of the said Stock. and

Whereas, said letter and the reply thereto by the President of this Company, gave to said James L. Parrish, the option to purchase for himself and certain of his friends an additional 1180 Shares of said Stock on certain conditions fully set forth in said letter, as by reference thereto will appear and

Whereas, said James L. Parrish failed to avail himself, of all of the privileges in said optional letter mentioned, but did execute and deliver to this Company a good and valid release of his further privileges therein mentioned, dated January 8. 1896, and

To the Chairman of a meeting of the Stockholders of the New Jersey and Pennsylvania Concentrating Works:-

Report of Harry F. Miller and Thos. A. Edison Jr. as Tellers of the election of seven directors by the Stockholders of the New Jersey and Pennsylvania Concentrating Works held at the Laboratory of Thomas A. Edison, Orange, N. J. on the Eighth day of January 1896 from Eleven o'clock to twelve o'clock noon.

We hereby certify, that the hour of twelve having arrived we have counted the votes cast at the above election, and hereby declare the total number of votes cast was 13809 out of a total of 18005 shares and that the following persons were elected directors thereby:-

Thos. A. Edison
Chas. Batchelor
W. S. Perry
Walter Cutting
R. N. Dyer
John F. Randolph
N. F. Mallory

Witness our hands and seals, this Eighth day of January, one thousand eight hundred and ninety-six

Thomas A Edison Jr.
Harry F. Miller

Witness:-
Alexander Elliott Jr.

Whereas, the President of this Company has sold to Dr. D. Marks of Philadelphia, Penna, and certain of his friends 180 of the remaining 205 Shares for the same terms and conditions mentioned in said Parrish letter- now therefore

Be it Resolved, that the action of our President in securing the execution and delivery to this Company of said release of option from said James B. Parrish and the sale of the said 180 Shares to the said Dr. D. Marks with the privileges of a further purchase of Stock as set forth in said Parrish letter be and the same is hereby ratified and confirmed by the Stockholders-

This motion was seconded by Mr. Dr. S. Malloy and having been put by the chair was unanimously carried.

The minutes of the previous meeting was read and approved.

The meeting then proceeded to the election of seven Directors for the ensuing year. Mr. Dr. S. Malloy nominated Harry F. Miller and Thomas A. Edison Jr. to act as tellers which was seconded by Mr. Randolph.

Mr. Chas. Batchelor then nominated Thomas A. Edison - Charles Batchelor, Dr. S. Perry, Walter Cutting, R. K. Myers, John F. Randolph, and Dr. S. Malloy as Directors for the ensuing year which was seconded by Mr. Charles B. Peaman.

The polls were declared open for one hour. At the end of the hour, the polls were closed and after counting the votes the tellers announced that 13809 votes out of a total of 18005 votes had been cast for

the following persons to serve as Directors for the ensuing year

Thomas A. Edison
Charles Batchelor
Jr. S. Perry
Walter Cutting
A. H. Dyer
John F. Randolph
Wm. S. Mallory

The Stockholders then made the following selections from among the Directors to serve as Officers of the Company for the ensuing year, the same vote being cast as that for the Directors

Thomas A. Edison	President
Wm. S. Mallory	Vice President
J. F. Randolph	Secretary & Treasurer

There being no further business the meeting adjourned

J. F. Randolph
Secretary

Minutes of the Annual Meeting of the Stockholders
of the
New Jersey and Pennsylvania Concentrating Works.

Held at the Laboratory of Thomas A. Edison Orange N. J. on Wednesday January 15th 1896 at seven o'clock P. M.

The President Mr Edison in the Chair.

The minutes of the previous meeting were read and approved.

Mr Mallory then nominated Mr A. E. Chidley and Mr R. C. Dedonald to act as tellers the nomination was seconded by Mr W. D. Marks and carried.

Mr W. D. Marks nominated Thos A. Edison A. H. Dyer. Walter Cutting. Chas Batchelor. Wm S. Perry. J. F. Randolph and Wm S. Mallory to serve as directors, the nomination was seconded by Mr W. M. Lewering and carried.

There being no further nominations the Polls were declared open.

Mr W. D. Marks offered the following resolution,

Whereas Isaac W. Clothier of Philadelphia Pa. has notified the officers of this Company of the loss of his certificate No 913 for fifty shares of stock standing in his name on the books of this Company, and did file with the Treasurer of this Company his Bond in the sum of five thousand dollars dated December 12th 1895, with one James C. Parrish of New York City as surety thereon for indemnity against any claim that may be made by reason of the loss of said certificate against this Company, which said Bond duly executed is now on file with the Treasurer of

this Company, now therefore be it

Resolved that the action of the President and Treasurer in issuing to said Isaac H. Clothier a new certificate of fifty shares, being certificate No. 935 in the place and stead of said both certificate No. 918 be and the said action of said President and Treasurer is hereby ratified and confirmed by this meeting.

This motion was seconded by Mr. W. M. Lewing and having been put by the chair was carried. Mr. D. Morke then offered the following resolution

Whereas, the defendants in an action brought in the Supreme Court of the State of New York in the City and County of New York, wherein the New Jersey and Pennsylvania Concentrating Works were plaintiffs and Charles T. Ackerman et al were defendants did make an offer of Compromise, which Compromise was accepted by the President of this Company on its behalf. And whereas a part of said compromise consisted of the execution and delivery by this Company of a release of which the following is a true copy.

This Indenture made and entered into this sixth day of August, 1896, between New Jersey and Pennsylvania Concentrating Works, a corporation organized under the laws of the State of New Jersey, as party of the first part, and Charles T. Ackerman and ninety-nine other underwriters hereinafter mentioned as parties of the second part. Witnesseth:

Whereas the parties of the second part, being the one hundred underwriters therein mentioned, did, on or about the

8th, day of June 1894, execute and deliver to the party of the first part a certain policy of insurance bearing the date last aforesaid, and numbered 1634 whereby they did under the name and style of Guarantee and Accident Lloyds, insure the party of the first part against loss by reason of accident to its employees, as is therein more fully set forth, and

Whereas the parties of the second part, did, on or about the 8th day of June, 1892, execute and deliver to the party of the first part a similar policy, bearing the date last aforesaid, and numbered 2244 whereby under the name and style of Guarantee and Accident Lloyds, they insured the party of the first part against loss by accident to its employees, as is therein more fully set forth.

Now Therefore, this indenture further witnesseth that the party of the first part both, for itself, its successors and assigns, in consideration of the payment by the parties of the second part of the sum of Six Hundred and Twenty-Five Dollars, and the satisfaction by the parties of the second part of a certain judgement for $763.176, in favor of Nicola Colelli, and against the party of the first part, entered in the Office of the Clerk of the City and County of New York, on the 20th day of October 1894, and the satisfaction of a certain other judgement between the same parties for $74.49 entered in the Office of the Clerk of the City and County of New York, on the 29th day of June 1895, hereby remise, release, and forever discharge the parties of the second part, and each

and every of them, their personal representatives and assigns, from all claims demands or rights of action now vested in the party of the first part by virtue of the execution and delivery of the two policies of insurance above mentioned.

In witness whereof the party of the first part has caused these presents to be signed by its President and its Corporate seal to be hereto affixed the day and year first above written.

The Pennsylvania Incandescent Broker

Attest. By Thomas A. Edison

John F. Randolph, President

Secretary.

(Broker, Seal.)

And whereas the form of said release was approved by the Counsel of this Company in said action. Now therefore be it

Resolved, that the action of the President and Secretary of this Company in executing and delivering said release hereinbefore fully set forth and affixing thereto its Corporate seal on behalf of this Company be and said action of said President and Secretary is hereby ratified and confirmed by this meeting.

This motion was seconded by Mr. R. M. Lovering and having been put by the Chair was carried.

At the end of the hour the polls were closed and after counting the votes the tellers announced that 14452 votes out of a total of 19929 votes had been cast for the following persons to serve as Directors for the ensuing year.

To the Chairman of a meeting of the Stockholders of the New Jersey and Pennsylvania Concentrating Works.-

Report of R. E. Gridley and F. C. Lewonald as Tellers of the election of seven Directors by the Stockholders of the New Jersey and Pennsylvania Concentrating Works held at the Laboratory of Thomas A. Edison, Orange N. J. on the thirteenth day of January 1897 from 11 a.m. to 12 M.

We hereby certify that the hour of 12 M. having arrived we have counted the votes cast at the above election, and hereby declare the total number of votes cast was 14,452 votes of a total of 19929 shares and that the following persons were elected directors thereof:

Thos. A. Edison
A. H. Ayres.
Walter Cutting
Chas. Batchelor
W. S. Perry
J. F. Randolph.
W. S. Mallory

Witness our hands and seals this thirteenth day of January one thousand eight hundred and ninety seven.

R. E. Gridley.
F. C. Lewonald

Witness:-
E. J. Olmsted

Thomas A. Edison	Chas. Batchelor
R. H. Dyer	N. S. Perry
Waller Polling	J. B. Randolph

N. S. Mallory

The Stockholders then made the following selections from among the Directors to serve as Officers of the Company for the ensuing year, the same vote being cast as that for the Directors.

Thomas A. Edison	President
N. S. Mallory	Vice President
J. B. Randolph	Secretary and Treasurer

There being no further business the meeting adjourned.

J. B. Randolph
Secretary

Minutes of a Regular Meeting of the Board of Directors
— of the —
New Jersey and Pennsylvania Concentrating Works.

Held at the Laboratory of Thomas A. Edison Orange N.J. January 13th 1897 at 10 o'clock P.M.

Present: Messrs Edison, Batchelor, Mallory and Randolph a majority of the board.

The President Mr Edison in the Chair.

After some discussion among the Directors as to the advisability of increasing the Capital Stock of this Company Mr Batchelor offered the following resolution:

The Board of Directors of the New Jersey and Pennsylvania Concentrating Works a Corporation of New Jersey on this 13th day of January 1897, do hereby Resolve and declare that it is advisable that the Capital stock of said Company be increased two hundred and fifty thousand dollars, that is to say from two million dollars the present capital to two million two hundred and fifty thousand dollars the proposed future capital, and they do hereby call a meeting of the Stockholders to be held at the Company's office in the Laboratory of Thomas A. Edison Orange N.J. on the 25th day of January 1897 at 9.30 A.M. to take action on the above resolution.

This motion was seconded by Mr Mallory and having been put by the chair was carried.

There being no further business the meeting adjourned.

J. A. Randolph.
Secretary.

Minutes of a Special Meeting of the Stockholders
— of the —
New Jersey and Pennsylvania Concentrating Works.

Held at the Edison Laboratory, Orange N.J. on January 25 1897 at nine thirty A.M. in accordance with notices sent each stockholder.

Mr Edison the President in the Chair.

The President stated that the object of this meeting was for the purpose of taking action on the resolution of the Board of Directors passed at its meeting held on Jany 13th 1897, to increase the Capital Stock of the Company two hundred and fifty thousand dollars.

The President then requested the secretary to read from the minutes the resolution above referred to, which he then read.

The President then stated that the polls were now open for the adoption or rejection of the said resolution as read.

The President then appointed F. C. Dunnald and A. E. Bradley as tellers.

The hour of ten thirty A.M. having arrived and the polls having been opened one hour the tellers then certified that the following number of shares of stock were voted for the adoption of the resolution as read, and that no shares of stock were voted for its rejection.

Richard N. Dyer 269 shares by Proxy to W. S. Mallory
Thomas A. Edison 14337 " in person
W. S. Mallory 34 "

John F. Randolph 21 Shares in person
Thos A. Edison 418 " by proxy to Thos A. Edison
Mary E. Miller 4 " " " " " " "
W. S. Perry 237 " " " " W. S. Mallory
Chas Batchelor 595 " " " " " " "
being a total of 15915 Shares out of a total of 19929 Shares.

The President and Secretary then signed, sealed and made proof of the Certificate of increase from Two million dollars to Two million two hundred and fifty thousand dollars, and the Stockholders then signed their assent thereto in the number of votes 15915 as above certified to by the tellers.

On motion the meeting then adjourned.

J. F. Randolph
Secretary.

Minutes of the Annual Meeting of the Stockholders of the New Jersey and Pennsylvania Concentrating Works.

Held at the office of the Company, Edisons Laboratory Orange N.J. on Wednesday January 16th 1878 at ten thirty A.M.

The President in the Chair.

The reading of the minutes of the previous meeting were dispensed with.

The chair stated that the object of the meeting was for the election of seven directors, President, Vice President, Treasurer and Secretary to serve for the ensuing year.

Upon motion duly seconded Mr E. L. Almsted and Mr F. C. Bernadd were elected tellers.

The polls were then declared open.

Upon motion duly seconded the following gentlemen were nominated as Directors. Thomas A. Edison, A. N. Dyer, Baxter Cutting, W. S. Mallory, Chas Batchelor, W. S. Perry and J. F. Randolph.

The President submitted his report which was as follows:-

The mills of the Company were completed and construction work stopped about November 1st; the mines were also ready, and stripping finished on over 150,000 tons of ore, of which, 17,000 tons were drilled ready for blasting. The Company then entered upon the testing period reducing the employees from 400 until there remains at present but 75, which are engaged in making such changes as the tests indicate are necessary. It is uncertain how long this testing period will

continues, but there is every reason to expect that it will not be of long duration as the only remaining difficulty in the crushing plant is the clogging of the Dryer and the insufficient dimensions of the stack, making it impossible to get enough heat into the Dryer to evaporate all the water from the ore when it is largely mixed with mud, ice and snow. This difficulty arose from the change in loading from hand loading to steam shovels, the latter taking all that comes in their way, whereas, in hand work mud, roots, ice and snow were not loaded.

These changes are now being made and we think when finished no further difficulty will arise from wet ore. The working of the Crushing Plant otherwise has been up to expectations. We have been constantly striving to reduce the cost of mining by drilling less holes and using less dynamite per ton of rock blasted; this, of course, threw more work on the Mill and as the average size of the blasted rocks increased, from lack of dynamite, the slugger plates of the Gruson rolls were severely taxed until a point was reached where they were torn from the rolls by the action of the rocks. By a change which has been made in the principle of the slugger plates the defect was turned to an advantage and now the rolls will take anything that can be put into the hopper, and the cost of mining has been reduced so low that there is a scarcely any margin left for reduction.

The two large steam shovels work perfectly and load a greater quantity and at a cheaper rate than was

expected. The two shovels have ample capacity to supply the Mills with 4,000 or more tons per day of 20 hours.

Our new power house is complete, and all Electrical Machinery is now from that plant.

The Belching Furnace has also been tested from time to time, and changes made until the only defect now known to prevent continuous operation, is the pinching of the iron buckets, causing a number to dump their contents prematurely. The whole of the 7,500 buckets had to be disconnected and sent to the shop to undergo an operation, this, while not expensive, requires time and is now being done.

Our expenses now for labor are quite small and for material comparatively nothing when satisfactory test shall have been made and the Mills can be depended upon for continuous running, it will be necessary to provide money for operating the plant between the time the ore is delivered to consumers and the cash received from them; I am in negotiations at the present time with a syndicate to furnish operating money until the Company has its own funds, but as to the money needed to liquidate the Company's present indebtedness, and that for tech expenses, leases, insurance and taxes, nothing has been done except by myself. I am still prepared, as far as I am able, to furnish the Company money leaving for it the stock of the Company at par. Nothing so far has developed to change my estimate of the ultimate profitableness of this enterprise, of which the Edison plant is but a forerunner of a business which must reach great proportions.

Upon motion of Mr Perry seconded by Mr Batchelor the above report was received.

Mr Dr. S. Mallory the Vice President offered the following statement showing the condition of the Company on January 1st 1898 which was as follows:-

Statement of New Jersey and Pennsylvania Concentrating Works.

January 1- 1898 — Capital authorized $2250.000

Plant Th. Edison, N. J.		
Cost of Machinery, Buildings, Railroad, Cars, Locomotives, and all other appliances, also testing	$2091.929.15	
Less sales Ore, Sand etc.	158.591.64	$1933337.51
Cost of Real Estate in fee.		94.770.00
Cost of Mineral Rights and Leases		225,239.31
Supplies on hand		35.000.00
Ore on hand		5,000.00
Accounts Receivable		16,044.60
Cash		8.307.77
		$2,317,699.19
Accounts Payable all for Index	$9606.73	
Notes Payable for Index	46792.42	
Capital Stock	2261.299.04	$2,317,699.19

On the capital stock as shown above 627 shares have not been issued.

The above liabilities reduced to January 12- about $6000.00 In addition to the above the Company has issued the following notes which have been indorsed by Mr Edison, and it has received the proceeds from him. The payments of these notes has been assumed by Mr Edison who has given a written agreement.

indemnifying the company against them.

Note due Jan 20-	12000.00
" " Feb 4-	5000.00
" " " 10-	6500.00
" " Apr 24-	20000.00
" " June 2-	8000.00
Total	$51500.00

Upon motion of Mr Perry seconded by Mr Batchelor the above report was adopted as read.

The hour of eleven-thirty A. M. having arrived the tellers reported that 19515 votes out of a total of 21985 had been cast for the following persons as Directors for the ensuing year and they were thereby elected.

Thos. A. Edison	R. N. Ryer
Dr. S. Mallory	Frazier Rutling
J. F. Randolph	Dr. S. Perry
Chas Batchelor	

Upon motion duly seconded Mr Edison was nominated as President, Mr Mallory for Vice President and J. F. Randolph as Treasurer and Secretary for the ensuing year.

There being no further nominations Mr Batchelor was duly authorized to cast the vote for Mr Edison as President, Mr Mallory as Vice President and J. F. Randolph Treasurer and Secretary and they were declared duly elected.

There being no further business the meeting adjourned

J. F. Randolph
Secretary

Minutes of the Annual Meeting of the Stockholders
of the
New Jersey and Pennsylvania Concentrating Works.
Held at the Edison Laboratory, Orange N.J. on January
10th 1900 at three o'clock P.M.

The President in the Chair.

The Chair stated that the object of the meeting was for the election of seven directors, President, Vice President, Treasurer and Secretary for the ensuing year and any other business which should properly come before the meeting.

Upon motion duly seconded Mr S. C. Dunnald and Frederick Boyle were appointed Tellers.

The polls were then declared open.

Upon Motion of Mr W. S. Perry seconded by Mr Chas Batchelor the following gentlemen were nominated as Directors, Thomas A. Edison, Chas Batchelor, W. S. Perry, Walter Cutting, P. W. Dyer, J. B. Randolph and W. S. Mallory.

Upon motion of Mr Perry seconded by Mr Walter Cutting the reading of the Minutes were dispensed with,

Mr W. S. Perry then offered the following resolution:-

Resolved:- It is the sense of this meeting, that the annual meeting of the Stock-holders of the Company be held on the fourth Wednesday of January of each year, instead of the second Wednesday, as now fixed in the by-laws, and that Article 9, Section 1, of the by-laws of this Company be amended so as to read as follows- "The Annual meeting of the Stock-holders shall be held at the Office of the Company at the Laboratory of Thomas A. Edison, on the fourth Wednesday of January in each and every year, beginning

with the month of January 1901."

This motion was seconded by Mr Dunfey and unanimously carried.

Mr Perry offered the following resolution:-

Resolved:- It is the sense of this meeting that the Board of Directors of the Company shall meet on the fourth Wednesday of January of each year, instead of the second Wednesday as now fixed in the by-laws, and that that portion of Article 10 of the by-laws, of this Company be amended so as to read as follows:- "The Board of Directors shall meet at the office of the Company at Mr Edison's Laboratory, Orange, N.J. immediately after the annual meeting of Stock holders, on the fourth Wednesday in January in each and every year. If the Stock holders meeting is not held on that day, the Board shall meet immediately after such meeting "whenever held." and that the balance of Article 10 remain as is now inserted in the original by-laws.

This motion was seconded by Mr Dunfey and unanimously carried.

Mr Perry offered the following resolution:-

Resolved:- That the Vice-President of this Company be and is hereby authorized to countersign all checks drawn by the Treasurer of this Company, and that that portion of Article 11 of the by-laws which relates to the duties of the Vice-President, be amended to conform with this resolution and to read as follows:- "The Vice President shall perform all the duties and have all the powers of the President

in his absence, and the President or Vice President shall countersign all checks drawn by the Treasurer of this Company."

This motion was seconded by Mr J. D. W. Cutting and unanimously carried.

Mr W. S. Malloy the Vice-President then offered the following statement which was ordered spread on the Minutes of this meeting.

Plant at Edison N.J.

Real Machinery, Buildings, railroad Cars, locomotives and all other appliances, also Patents.	2,331,998.05	
Less as below, and so	180,688.72	$ 2,198,309.33
Cost of Real Estate		94,770.00
Cost of Immaterial Rights and Leases		246,318.37
Supplies and on hand		36,500.00
Accounts Receivable		19,462.57
Cash		5,581.94
		$ 2,600,942.21

Accounts and Notes Payable	$ 66,831.20
Due Mr Edison for Cash Advanced	334,611.01
Capital Stock issued	2,199,500.00
	$ 2,600,942.21

Mr Perry offered the following.

Whereas this Company on January 1-1900 is indebted to Mr Edison for money advanced to carry on its work, amounting to $334,611.01 and will be further indebted for necessary future advances, and whereas of the authorized capital of $2,250,000. there has been $2,199,500. issued, leaving $50,500. still in the Treasury. Resolved. It is the sense

of this meeting that the Board of Directors be and are hereby authorized to instruct the Treasurer to issue to Mr Edison the $50,500. of the capital stock still remaining in the treasury, and the Company's demand notes, bearing 5% interest for the balance now due and that which may become due for future necessary advances made by him.

This motion was seconded by Mr Chas Batchelor and unanimously carried.

The hour of 4 P.M. having arrived the tellers reported that 19420 votes out of a total of 21995 shares had been cast and the following gentlemen had been elected directors thereof.

Thomas A. Edison	Walter Cutting
Charles Batchelor	A. B. Ayer
W. S. Perry	J. D. Randolph
W. S. Malloy	

Upon motion of Mr Perry seconded by Mr J. D. W. Cutting the following officers were unanimously chosen for the ensuing year, Thomas A. Edison President, W. S. Malloy Vice President and J. D. Randolph Treasurer and Secretary.

There being no further business the meeting adjourned.

J. D. Randolph
Secretary

Minutes of a Regular meeting of the Board of Directors of the New Jersey and Pennsylvania Concentrating Works.

Held at the Edison Laboratory, Orange N. J. on January 10-1900 at four fifteen P. M.

Present:- Messrs Thomas A. Edison, H. S. Malloy, H. S. Pery, Walter Cutting, Chas Batchelor and J. F. Randolph.

The President in the Chair,

Upon motion of Mr Pery seconded by Mr Cutting the Treasurer was instructed to issue to Mr Thomas A. Edison the $50,500.00/100 worth of Stock in the Treasury also issue to Mr Thomas A. Edison the Company's Demand Note bearing five per cent interest for the balance of his account to January 1-1900 also issue to Mr Edison demand notes bearing five per cent interest for future necessary advances made by him.

There being no further business the meeting adjourned.

J. F. Randolph
Secretary.

NEW JERSEY AND PENNSYLVANIA CONCENTRATING WORKS LETTERBOOKS

These records, which cover the period 1889-1903, consist of 52 volumes containing tissue copies of the company's outgoing correspondence and internal communications. Some of the material is duplicated in, or is complemented by, material in other series.

The letterbooks are divided into 7 subgroups determined by the principal author(s) of the volumes, the specific subject matter, and considerations of chronological continuity:

1. Harry M. Livor Letterbook (1890-1891)
2. Letterbooks by Thomas Butler, Harry M. Livor, Walter S. Mallory, et al. (14 vols., 1889-1898)
3. Walter S. Mallory Letterbooks (29 vols., 1893-1903)
4. Walter S. Mallory Personal and Company Letterbooks (3 vols., 1895-1899)
5. Edwin I. Olmsted Letterbooks [Requisitions] (2 vols., 1894, 1900)
6. Francis R. Upton Letterbooks [Sand Sales] (2 vols., 1898-1902)
7. Emil Herter Letterbook [Orders] (1899-1902)

Within each subgroup, the books are arranged in chronological order. In some instances, a chronological gap exists between the end of one letterbook and the beginning of the next.

The principal authors (and often recipients) of the correspondence are the senior officers and supervisory employees of the company, including Thomas Butler, secretary; William S. Perry, secretary and treasurer; Emil Herter, draftsman and mechanical engineer; Harry M. Livor, general manager; Walter S. Mallory, vice president; Edwin I. Olmsted, clerk and (later) purchasing agent; and William P. Walsh and Francis R. Upton, sales agents for sand. Other authors include Edison, president; Samuel Insull, vice president from 1890 to 1893; and John F. Randolph, secretary/treasurer after 1895.

Although there are occasional letters in Edison's hand, most of the material by Edison is written in the hand of Mallory.

The letterbooks cover business matters such as stock transactions; notices of stockholders' and directors' meetings; payment of company obligations; changes in company officers; insurance, employment, tax, and legal matters; press relations; market and economic conditions; properties leased or owned; the design and purchase of equipment; the chemical analysis, manufacture, and marketing of iron ore, briquettes, and sand; the construction, modification, and closing of the Ogden works; interest in minerals other than iron, such as gold, hematite, and molybdenite; and visitors to the Ogden works. There is some personal correspondence of Mallory and Perry, as well as letters about Edison's views on company policies and correspondence about his schedule, character, health, and family.

In addition, the letterbooks contain occasional correspondence regarding Edison's other iron ore enterprises; some letters concerning phonograph contracts, litigation, and stock; items pertaining to the price of General Electric securities and other aspects of the electric light business; and a few letters about the telephone, kinetoscope, and phonoplex business. The following individuals and companies are among the more notable recipients: Charles Batchelor, Robert L. Cutting, Jr., Walter Cutting, Herman E. Dick, William C. Frick, Samuel S. McClure, Erich Rathenau, Josiah C. Reiff, George Richards, Frank C. Roberts, William L. Saunders, Alexander Thielen, Joseph Wharton, Ingersoll Sergeant Drill Co., New Jersey Zinc Co., and Pilling & Crane.

Documents containing the following information have been filmed: Edison's direct intervention in company matters, Edison's views on company policies, and aspects of Edison's character, health, schedule, or family; changes involving the West Orange laboratory, Glenmont, and other Edison properties; overviews, summaries, reports, and general descriptions of mill operations, technical procedures, company finances, or company marketing strategies; location of company offices and significant related information (such as the renaming of the Ogden site); changes in company officers, senior management, and supervisory personnel; opening and closing of major company facilities; acquisition of other companies; descriptions of company products, such as iron ore briquettes and sand; statements of current or anticipated company earnings; insurance material revealing the condition or value of property; non-

ore milling documents relating to other Edison companies (excluding routine orders from the Concentrating Works for equipment and supplies).

Documents concerning the following subjects have not been filmed: the acquisition or disposition of tracts for mining purposes; employment matters involving non-managerial employees, unless revealing significant information about mill operations; employee injuries; the purchase of equipment and supplies, unless revealing significant information about design; construction or modification of specific buildings, unless involving Edison directly; specific orders for iron ore, briquettes, or sand, unless revealing significant information about the product or customer; ore sample analyses, unless revealing significant information about the product; insurance premium payments; stock transactions, especially calls for payments and notices of stockholders' meetings; payment of company financial obligations; personal correspondence by Mallory and others. In addition, the index at the beginning or end of each book has not been filmed. One letterbook (LM-203) is too fragile to be filmed.

Although every technical effort has been made to ensure the legibility of the documents on the microfilm, some of the materials may be difficult to read because of faint ink, spreading ink, bleed-through, discolored paper, or wrinkled pages. In particular, some of the documents are written in a very faint green ink. One letterbook (LM-201) presents especially severe legibility problems.

Letterbook, LM-201

This letterbook covers the period July 1890-April 1891. Most of the correspondence is by Harry M. Livor, general manager of the company. The letters deal mainly with the construction and equipment of the concentrating works at Ogden, New Jersey. There are also some progress reports submitted to Edison, president of the company.

Letterbook, LM-202

This letterbook covers the period March 1889-May 1890. Most of the correspondence is by Thomas Butler, secretary of the company; Harry M. Livor, general manager; and William S. Perry, treasurer. There are also some letters by Samuel Insull, who was treasurer prior to January 8, 1890. Much of the correspondence deals with company financial obligations, stock transactions, stockholders' meetings, and personnel matters. Many of the letters concern the operation of the concentrating mill at Bechtelsville, Pennsylvania. Included is correspondence dealing with the supply of ore to the mill and with the disposition of machinery and other materials upon its closing.

Letterbook, LM-204

This letterbook covers the period April-July 1891. Most of the correspondence is by Thomas Butler, secretary of the company, and William S. Perry, treasurer. Some of the letters are by Samuel Insull, vice president. The letters deal mainly with orders for ore concentrate, leases on mining property, and stock transactions. Some letters pertain to the disposition of property at the Bechtelsville mill, while others concern the acquisition of the Ogden Iron Co. A few items relate to the hiring of Henry W. Hart as general manager following the resignation of Harry M. Livor.

Letterbook, LM-205

This letterbook covers the period December 1891-April 1892. Most of the correspondence is by Thomas Butler, secretary of the company; William S. Perry, treasurer; John P. Walsh, sales agent for sand; and Edwin I. Olmsted, clerk. The letters deal mainly with stock transactions, equipment, supplies, and sand orders. Many of the documents relate to operating problems at the Ogden works, company finances, and ore marketing strategies. Some items pertain to the market price of General Electric securities.

Letterbook, LM-206

This letterbook covers the period September-November 1892. Most of the correspondence is by William S. Perry, treasurer of the company; John P. Walsh, sales agent for sand; and Edwin I. Olmsted, clerk. The letters deal mainly with stock transactions, personnel matters, company financial obligations, equipment, supplies, and sand orders. Many of the documents are concerned with production at the Ogden works and the purchase of new bricking equipment. One letter pertains to the wages paid to Thomas A. Edison, Jr. Another relates to changing the name of the location of the mill from Ogden to Edison.

Letterbook, LM-207

This letterbook covers the period November 1892-April 1893. Most of the correspondence is by Thomas Butler, secretary of the company; William S. Perry, treasurer; John P. Walsh, sales agent for sand; and Edwin I. Olmsted, clerk. The letters deal mainly with personnel matters, company financial obligations, stock transactions, equipment, supplies, and sand orders. Some of the letters pertain to Edison's experiments at the Ogden works, fire precautions at the mill, and the ore milling processes of other companies. There are also minutes of a directors' meeting.

Letterbook, LM-208

This letterbook covers the period April-July 1893. Most of the correspondence is by William S. Perry, treasurer of the company; John P. Walsh, sales agent for sand; and Edwin I. Olmsted, clerk. The letters deal mainly with company financial obligations, stock transactions, equipment, supplies, and sand orders. Included are items pertaining to the purchase of insurance on Edison's life, with the company as beneficiary. One letter relates to the wages of Thomas A. Edison, Jr.

Letterbook, LM-209

This letterbook covers the period July-November 1893. Most of the correspondence is by William S. Perry, treasurer of the company; John P. Walsh, sales agent for sand; and Edwin I. Olmsted, purchasing agent. The letters deal mainly with stock transactions, company financial obligations, equipment, supplies, and sand orders. Included are items pertaining to the purchase of insurance on Edison's life, with the company as beneficiary; the market price of General Electric securities; and general economic conditions. One letter relates to a directors' meeting of the Edison Ore Milling Co., Ltd.

Letterbook, LM-210

This letterbook covers the period November 1893-July 1894. Most of the correspondence is by William S. Perry, treasurer of the company; John P. Walsh, sales agent for sand; and Edwin I. Olmsted, purchasing agent. The letters deal mainly with mining property leases, company financial obligations, stock transactions, equipment, supplies, and sand orders. Included are items pertaining to the purchase of insurance on Edison's life, the market price of General Electric securities, and general economic conditions. One item relates to a fall suffered by Edison at the Odgen works.

Letterbook, LM-211

This letterbook covers the period July 1894-February 1896. Most of the correspondence is by Walter S. Mallory, vice-president of the company; William S. Perry, secretary and treasurer; John F. Randolph, successor to Perry; and John P. Walsh, sales agent for sand. The letters deal mainly with stock transactions, personnel matters, property insurance, equipment, supplies, and sand orders. There are also letters describing operations at the Ogden works, briquette production, and product performance. A ten-page progress report from Mallory to James C. Parrish ends with a prediction that "we will be able to turn out product at a very considerable profit, and fully realize all we have expected." Other letters pertain to tax assessments, the market price of General Electric securities, and Edison's attempt to interest German investors in the company. One letter concerns a sprained ankle suffered by Edison.

Letterbook, LM-212

This letterbook covers the period February-September 1896. Most of the correspondence is by Walter S. Mallory, vice-president of the company; John F. Randolph, treasurer; and Edwin I. Olmsted, purchasing agent. The letters deal mainly with personnel matters, company financial obligations, sand orders, equipment, and supplies. There is also correspondence about renovations at the Ogden works. Other items pertain to insurance and to the company's credit rating.

Letterbook, LM-213

This letterbook covers the period August 1896-March 1897. Most of the correspondence is by Walter S. Mallory, vice-president of the company, and Edwin I. Olmsted, purchasing agent. The letters deal mainly with equipment, supplies, and sand orders. Also included are letters by Edison relating to the market potential and production of his briquettes, the attributes of managers at the Ogden works, and the value of the mill for tax purposes. Other items pertain to the financial status of the company.

Letterbook, LM-214

This letterbook covers the period March 1897-January 1898. Most of the correspondence is by Edwin I. Olmsted, purchasing agent. There are also letters by Walter S. Mallory, vice-president, and John F. Randolph, treasurer. The documents deal mainly with equipment and supplies. One letter by Edison describes the process of making briquettes. Another item contains a detailed description of a briquette. Some letters deal with the use of respirators and smoke protectors at the Ogden works, the commercial feasibility of expansion into the Canadian market, and public relations regarding ore milling.

Letterbook, LM-215

This letterbook covers the period February-May 1898. Most of the correspondence is by Walter S. Mallory, vice-president of the company, and Edwin I. Olmsted, purchasing agent. The letters deal mainly with personnel matters, operations at the Ogden works, equipment, and supplies. Some items pertain to work for the New Jersey Zinc Co. in Franklin, New Jersey and to Edison's interest in gold. There are also items relating to Edison's health, the purchase of a large flag for the West Orange laboratory, and an ore milling exhibit at Madison Square Garden in New York City.

Letterbook, LM-216

This letterbook covers the period April-August 1893. Most of the correspondence is by Edison and Walter S. Mallory, vice-president of the company. Their letters relate to equipment and supplies, building construction, Edison's financial situation, and personnel matters. All of Edison's letters are written in the hand of Mallory, except for two concerning the purchase of motors. Other items pertain to insurance on Edison's life, Edison's opinion of Michigan iron ore, and property leased in Michigan for the possible erection of an ore milling facility. One letter describes operations at the Edison Phonograph Works in West Orange and the qualities desired in its superintendent.

Letterbook, LM-217

This letterbook covers the period August-September 1893. Most of the correspondence is by Edison and Walter S. Mallory, vice-president of the company. All but one of Edison's letters are written in the hand of Mallory. The letters relate to personnel matters, building renovations, equipment, and supplies. Some items pertain to the rebuilding of the narrow gauge railroad at the Ogden works. Also included are specifications, sent to prospective contractors, for the bricking machinery (one example has been filmed).

Letterbook, LM-218

This letterbook covers the period September-November 1893. Most of the correspondence is by Edison and Walter S. Mallory, vice-president of the company. The letters deal mainly with personnel matters, company financial obligations, building renovations, equipment, and supplies. There are two letters in Edison's hand describing his strategy for gaining control of the market for iron ore. Other items relate to Edison's interest in rail freight rates, international marketing, and industrial record keeping.

Letterbook, LM-219

This letterbook covers the period November 1893-January 1894. Most of the correspondence is by Edison and Walter S. Mallory, vice-president of the company. The letters deal mainly with personnel matters, company financial obligations, equipment, and supplies. Some of the items pertain to insurance for the Ogden works, the replacement of its chief engineer, and the lease of property in Michigan and the possible erection of a mill there. There are also letters containing Edison's views on lamp prices in Europe and on problems at the Edison Phonograph Works. A loose page inserted at the end of the book contains a note in Edison's hand, dated August 22, 1895, announcing that "work is hereby suspended at these Works."

Letterbook, LM-220

This letterbook covers the period January-May 1894. Most of the correspondence is by Edison and Walter S. Mallory, vice-president of the company. The letters deal mainly with company financial obligations, personnel matters, equipment, and supplies. Several items relate to Edison's health. Another letter describes management techniques at the Ogden works.

Letterbook, LM-221

This letterbook covers the period May-June 1894. Most of the correspondence is by Edison and Walter S. Mallory, vice-president of the company. The letters deal mainly with personnel matters, company financial obligations, equipment, and supplies. Other letters pertain to insurance policies on Edison's life and the Ogden works, the processing capacity expected from the crushers and the furnace, and Edison's perfectionism regarding the design of machinery.

Letterbook, LM-222

This letterbook covers the period June-July 1894. Most of the correspondence is by Edison and Walter S. Mallory, vice-president of the company. The letters deal mainly with personnel matters, equipment, and supplies. Other items describe operations and changes at the Ogden works, labor troubles attributed to liquor, and Edison's health. Also included is a consulting engineer's report on the traveling crane.

Letterbook, LM-223

This letterbook covers the period July-August 1894. Most of the correspondence is by Edison and Walter S. Mallory, vice-president of the company. The letters deal mainly with equipment and supplies. Some of the letters pertain to the company's financial status. One item mentions Edison's test of drinking water.

Letterbook, LM-224

This letterbook covers the period August-October 1894. Most of the correspondence is by Edison and Walter S. Mallory, vice-president of the company. The letters deal mainly with the sale of by-products such as sand and ore dust, with personnel matters, and equipment and supplies. There are also letters dealing with Edison's health and an inquiry regarding the cost of installing a furnace at Glenmont. Some letters concern the marketing of molybdenite and the expected reopening of the Ogden works. Among the items selected for filming is an example of the sales descriptions sent to prospective buyers of sand. There is also an example of the inquiries made during a search for a chief steam engineer.

Letterbook, LM-225

This letterbook covers the period October-December 1894. Most of the correspondence is by Edison and Walter S. Mallory, vice-president of the company. The letters deal mainly with company finances, personnel matters, equipment, supplies, and sand orders. Some of the letters pertain to delays in reopening the Ogden works, attempts to find rubber suits for the miners to wear in wet weather, and the observance of Thanksgiving. A few items relate to the use of magnetic sand to increase the traction of streetcars. One letter contains comments by Edison on his ancestry.

Letterbook, LM-226

This letterbook covers the period December 1894-February 1895. Most of the correspondence is by Edison and Walter S. Mallory, vice-president of the company. The letters deal mainly with sand and ore orders, personnel matters, equipment, and supplies. Some letters relate to delays in reopening the Ogden plant and difficulties in paying the company's taxes. Also included are inquiries regarding a search for an apprentice electrician (one example has been filmed). One letter contains the observation that Edison's preoccupation

with briquette manufacturing has left him without "time to keep up with electrical matters." Another item is a request to examine the cost accounting system at the Bethlehem Iron Co.

Letterbook, LM-227

This letterbook covers the period February-April 1895. Most of the correspondence is by Edison and Walter S. Mallory, vice-president of the company. The letters deal mainly with personnel matters, equipment, supplies, and sand orders. One item relates to Edison's personal supervision of the boilers to check the quality of the coal. Another describes plans to change the line voltage at Glenmont and the West Orange laboratory. There is also a memorandum in Edison's hand detailing managerial responsibilities at the Ogden works. In addition, there are inquiries regarding a search for a foundry foreman (one example has been filmed).

Letterbook, LM-228

This letterbook covers the period April-September 1895. Most of the correspondence is by Edison and Walter S. Mallory, vice-president of the company. The letters deal mainly with personnel matters, company financial obligations, building alterations, equipment, supplies, and sand orders. Some of the items pertain to operations and the expected reopening of the Ogden works. Other letters relate to a porosity experiment conducted with briquettes, a suggestion by Edison regarding the making of castings, and the threat of a machinists' strike. There are also letters discussing kinetophone litigation and Edison's appraisal of the electric light business in the United States.

Letterbook, LM-229

This letterbook covers the period September 1895-January 1897. Most of the correspondence is by Edison and Walter S. Mallory, vice-president of the company. The letters deal mainly with personnel matters, building renovations, equipment, and supplies. Some of the items relate to the quality and marketing of the briquettes (several examples of letters sent to prospective buyers of the briquettes have been filmed). Other letters concern the company's financial condition and the design of its stock certificate. One letter discusses the financial status of the Edison Ore Milling Co., Ltd.

Letterbook, LM-230

This letterbook covers the period January-March 1897. Most of the correspondence is by Walter S. Mallory, vice-president of the company. The letters deal mainly with personnel matters, building renovations, equipment, and supplies. Included are letters relating to operations at the Ogden works, the use of respirators in dusty areas, and the depressed price of ore. Also included are specifications, sent to prospective contractors, for the bricker furnaces and ovens (one example has been filmed). One letter deals with the possibility of making bread from a combination of crushed stone and wheat. Another pertains to the installation of a new telephone at Glenmont.

Letterbook, LM-231

This letterbook covers the period March-May 1897. Most of the correspondence is by Walter S. Mallory, vice-president of the company. The letters deal mainly with personnel matters, building renovations, equipment, and supplies. Included are letters relating to iron ore prices, the proper method of heating briquettes, and comments on making briquettes with Mesabi ore. Other items pertain to the value of Edison Ore Milling Co. stock, the choice of insurance carriers, and work done for the New Jersey Zinc Co.

Letterbook, LM-232

This letterbook covers the period May-June 1897. Most of the correspondence is by Walter S. Mallory, vice-president of the company. The letters relate mainly to personnel matters, building renovations, insurance, equipment, and supplies. Included are letters sent to prospective contractors regarding the company's decision

to have bricking machines made in four different shops (an example has been filmed). Some letters deal with work done for the New Jersey Zinc Co.

Letterbook, LM-233

This letterbook covers the period June-July 1897. Most of the correspondence is by Walter S. Mallory, vice-president of the company. The letters relate mainly to personnel matters, equipment, and supplies. Some of the letters deal with work done for the New Jersey Zinc Co.

Letterbook, LM-234

This letterbook covers the period July-September 1897. Most of the correspondence is by Walter S. Mallory, vice-president of the company. The letters deal mainly with personnel matters, supplies, and equipment. Many of the letters relate to the purchase and operation of the shovel manufactured by the Toledo Foundry & Machine Co. and the sale of used crushers to the Desloge Consolidated Lead Co. of Missouri.

Letterbook, LM-235

This letterbook covers the period December 1897-August 1898. Most of the correspondence is by Walter S. Mallory, vice-president of the company. The letters deal mainly with personnel matters, equipment, and supplies. Many of the letters pertain to operations, experiments, and tests at the Ogden works. Some items relate to the quality of the iron ore briquettes, safety equipment for mill employees, and work done for the New Jersey Zinc Co. Other letters concern potential ore separating plants in the Midwest and Edison's interest in Canadian iron mines. There is also a letter detailing company strategy in regard to insurance policies.

Letterbook, LM-236

This letterbook covers the period July-December 1898. All of the correspondence is by Walter S. Mallory, vice-president of the company. His letters deal mainly with equipment, supplies, and routine daily instructions to employees at the Ogden works.

Letterbook, LM-237

This letterbook covers the period November-December 1898. All of the correspondence is by Walter S. Mallory, vice-president of the company. His letters deal mainly with briquettes, equipment, and supplies. Some of the items relate to operations at the Ogden works. One letter refers to Edison's method of hiring people.

Letterbook, LM-238

This letterbook covers the period June-October 1899. Most of the correspondence is by Walter S. Mallory, vice-president of the company. There is also correspondence by John F. Randolph, treasurer, and Francis R. Upton, sales agent for sand. The letters deal mainly with personnel matters, company financial obligations, briquettes, equipment, supplies, and sand orders. Some of the items relate to state taxes and the filing of reports with the state. A few letters pertain to cement. One letter concerns plans to mill gold ore at the Ortiz mine in New Mexico.

Letterbook, LM-239

This letterbook covers the period October-December 1899. Most of the correspondence is by Walter S. Mallory, vice-president of the company, and John F. Randolph, treasurer. The letters deal mainly with personnel matters, company financial obligations, equipment, and supplies. Some items relate to operations at the Ogden works and the prospects of future earnings. A few items pertain to the Edison Ore Milling Syndicate, Ltd. of London.

Letterbook, LM-240

This letterbook covers the period February-May 1900. Most of the correspondence is by Walter S. Mallory, vice-president of the company, and John F. Randolph, treasurer. The letters deal mainly with personnel matters, the company's financial obligations, equipment, and supplies. Some of the items concern operations and record keeping at the Ogden works. One letter includes Edison's response to criticism of the mill's operation. Some of the material relates to an experimental reheater of compressed air developed in conjunction with the Ingersoll Sergeant Drill Co. Other items pertain to work for the New Jersey Zinc Co.

Letterbook, LM-241

This letterbook covers the period September 1900-January 1901. Most of the correspondence is by Walter S. Mallory, vice-president of the company. The letters deal mainly with personnel matters, briquettes, company financial obligations, the suspension of operations at the Ogden works, and plans for its future reconstruction. One letter gives production statistics for 1900. Other items relate to work done for the New Jersey Zinc Co., a license issued by Edison Saunders Compressed Air Co., and experimental work with cement.

Letterbook, LM-242

This letterbook covers the period January-July 1901. Most of the correspondence is by Walter S. Mallory, vice-president of the company, and John F. Randolph, treasurer. The letters deal mainly with company financial obligations and the disposition of surplus stores and property from the Ogden works. Some of the items relate to the projected rebuilding of the works and insurance problems arising from the suspension of operations. Other documents pertain to an experimental reheater of compressed air developed in conjunction with the Ingersoll Sergeant Drill Co. There is also correspondence about ore material selected for exhibit at the Buffalo Exposition, a gold ore separating project at the Ortiz mine in New Mexico, and work for the New Jersey Zinc Co.

Letterbook, LM-243

This letterbook covers the period July 1901-June 1902. Most of the correspondence is by Walter S. Mallory, vice-president of the company, and Orville Benson, manager of the Edison mill. The letters deal mainly with the disposition of equipment and supplies, the reduction of the work force at the Ogden works, and efforts to reduce tax assessments against the company. Some of the items pertain to work done for the New Jersey Zinc Co. in Franklin, New Jersey. There is also correspondence about the development of ore milling interests in England and Norway. A few of the items relate to the Edison Portland Cement plant at Stewartsville, New Jersey, and the closing of the mill at Edison. Three letters deal with Edison's library at Edison, New Jersey, and with a photo of Edison at the mill sought by Mina Miller Edison.

Letterbook, LM-244

This letterbook covers the period June 1902-February 1903. Most of the correspondence is by Walter S. Mallory, vice-president of the company, and John F. Randolph, treasurer. The letters deal mainly with the disposition of equipment and supplies from the Ogden works. There is also correspondence about the development of ore milling interests in England and Norway, the experimental use of Edison's bricker by Baldwin Locomotive Co. of Philadelphia, and the possible infringement of Edison's dryer patent by the M.H. Treadwell Co. of New York City.

Letterbook, LM-245

This letterbook covers the periods July-December 1895 and November 1896-October 1897. There are also copies of two letters from 1883 regarding the Edison Telephone Co. of Europe, Ltd. Most of the letters are by Edison or Walter S. Mallory. Much of the correspondence relates to Mallory's personal affairs. Those letters pertaining to the New Jersey and Pennsylvania Concentrating Works deal mainly with personnel matters

production. There are also memoranda outlining the duties of six supervisory personnel at the Ogden works and an estimate of potential yearly profits based on varying amounts of output. A few letters concern phonograph litigation, phonograph contracts, and Edison's efforts to sell his Edison-Gower-Bell Telephone Co. shares. There is also an option, in Edison's own hand, for John Savoy to purchase all rights to the Edison phonoplex telegraph. Related letterbooks can be found in the Walter S. Mallory Papers (Special Collections Series).

Letterbook, LM-246

This letterbook covers the period April 1895-January 1898. Most of the correspondence is by Walter S. Mallory, vice-president of the company. The letters deal mainly with insurance renewals, stock transactions, company financial obligations, and plant operations. Some of the items pertain to Mallory's personal affairs. Other letters relate to Edison's efforts to attract outside investors to the company, the assertion of his ore milling patent rights, and a comparison of the company's costs and profits with a similar operation in Michigan. There is also a list of stockholders dated December 31, 1895. A few letters concern the phonograph business. Related letterbooks can be found in the Walter S. Mallory Papers (Special Collections Series).

Letterbook, LM-247

This letterbook covers the period January 1898-December 1899. Most of the correspondence is by Edison or Walter S. Mallory, vice-president of the company. The letters deal mainly with personnel matters, company financial obligations, briquette production, and alterations at the Ogden works. Some of the letters relate to Mallory's personal affairs. A few documents pertain to cement and the formation of the Edison Portland Cement Co. There is also material regarding phonograph orders, the assets of the Edison Phonograph Works, and the purchase of land adjoining Edison's West Orange laboratory. Two letters concern Edison's children, Thomas and Madeleine. Related letterbooks can be found in the Walter S. Mallory Papers (Special Collections Series).

Letterbook, LM-250

This letterbook covers the period March 1898-January 1901. Most of the correspondence is by Francis R. Upton, sales agent for sand. The letters deal mainly with the marketing of sand. A few of the items pertain to exhibitions in New York and Philadelphia. One letter is a reminiscence by Upton of electric light experiments at Menlo Park in the late 1870s. There is also a letter regarding the use of storage batteries in automobiles.

LETTERBOOKS NOT FILMED

Letterbook, LM-203

This letterbook covers the period July 1890-April 1891. Most of the correspondence is by Thomas Butler, secretary of the company, and William S. Perry, treasurer. Their letters deal mainly with company financial obligations, stock transactions, stockholders' meetings, and personnel matters. Many relate to operations at the Ogden works. There is also material pertaining to relations with the Edison Ore Milling Co., Ltd. A few letters concern the transfer of property from Edison and his wife to the Concentrating Works. Also included are an annual report and a financial statement for the company. This book is too fragile to be filmed.

Edwin I. Olmsted Letterbooks, LM-248 and LM-249

These two letterbooks cover the periods January-September 1894 and April-May 1900. Most of the correspondence is by Olmsted, writing either as purchasing agent for the company or on behalf of William S. Perry, treasurer. The letters deal mainly with requisitions for equipment and supplies. Some letters relate to requisitions for the Edison Portland Cement Co. in Stewartsville, New Jersey, for which Olmsted also worked as purchasing agent.

Francis R. Upton Letterbook, LM-251

This letterbook, which is a continuation of Letterbook, LM-250, covers the period January 1901-July 1902. All of the correspondence is by Upton, sales agent for sand, and John F. Randolph, treasurer. Their letters deal with the marketing of sand.

Emil Herter Letterbook, LM-252

This letterbook covers the period July 1899-February 1902. The book consists primarily of correspondence and drawings by Herter, draftsman for the company. The letters deal mainly with orders for patterns, equipment, parts, and supplies. Some of the items relate to work done for the New Jersey Zinc Co. of Franklin, New Jersey.

Letterbook, LM-201

This letterbook covers the period July 1890-April 1891. Most of the correspondence is by Harry M. Livor, general manager of the company. The letters deal mainly with the construction and equipment of the concentrating works at Ogden, New Jersey. There are also some progress reports submitted to Edison, president of the company. A portion of the company letterhead is affixed to the front cover and is inscribed "Letters H. M. Livor." The spine is stamped "Letters." The book contains 703 numbered pages and an index. Pages 329-697 are blank. Less than 5 percent of the book has been filmed. Some of the typewritten letters in this book may be partially or completely illegible due to very light green ink, smeared ink, and discolored paper. Some of the handwritten letters may be partially or completely illegible due to spreading brown ink and discolored paper.

May 20th 1907.

Mr. J. Parker Bass, Superintendent,

Utah & Pacific Concentrating Works,

Ogden, Utah.

Dear Sir:-

I have arranged with Messrs. Pierce & Thomas, from whom we will have to buy a considerable portion of the machinery for the new Refinery at Ogden, as follows: All bills to be settled on terms of 3, 4 & 5 months, with interest after 60 days. Also with Messrs. Dodge & Co. for the lumber necessary for the buildings, on 4 months with interest after 60 days. I have not yet ordered the Babcock & Wilcox Boiler, but do not anticipate any trouble in making similar terms with them. Will you kindly arrange with Mr. Insull to get us favorable terms from the Edison Machine Works for what we shall buy from them. I have ordered the Belt Separating Machines from Mr. Edison, and I presume that he will also give us equally favorable terms. Notwithstanding this credit we are not paying any more for our goods than we would have to pay if we bought for cash.

We have not run very much at Ogden since I saw you last, although we have accumulated about 100 tons of Concentrate. However, I can assure you that Mr. Edison's estimate of the capacity of the

W. S.

Mill in [illegible] of directors about a week ago, it is [illegible] by original [illegible]. Although I have been, as you know, sound the Mill accordingly, I still am unable to state what the capacity of the Mill is. The chances are that we will not know the capacity of the Mill until we have been running two or three months. I hope to commence early next [illegible] and run straight along on a commercial basis.

Kindly show this letter to Mr. Insull, and oblige

Yours truly,

General Manager.

July 31 1791

Thos M Conley
Esq
Dear Sir

Yours of the 27th
that getting up the poles
for the wire line to Sydney
is so that it may be all ready
coming with for the use of
the line on the Sydney branch

Yours truly
W H Lane

[illegible] 1st [illegible]

Mr. [illegible]

Dear Sir:

[illegible] will not kindly have immediate steps taken to arrange our tracks on Hogan so that we can continue the building projected. We are practically at a complete stand still, we have a large number of our employees on pay rolls who are idle. And which is something we have been [illegible] very much dislike to do.

Please reply by telegraph, letting us know if you can have immediate action taken in this matter.

Yours truly,

H M Lion

General Manager.

H M Lion

11/24

Book

mor

any

Plan

I

44
55

Dear Mr

Boiling to

would be

and not

room. This

but we

hoisting

the boiler

outlay. My

hoisting

Sunday to

room. I

35

Aug 28/90

Rudolph Hartzell Allentown Pa

Dear Sir

Yours of Aug 28 1890 rec'd. I cannot say that it will be some time after we will be in the market.

We can sell a quantity on the cars at Bethlehem if you want it in a lot the size of one pack of Chatham silk. This is an item that is being used in the Bethlehem factory & we feel sure we can make it

[illegible]

additional expense.

I am in fear of calling on Frank for it till I get the [illegible] ready till the 5th instant & I suppose he will have business enough about it.

I should like to see you at Ryde some day next week. I expect to be there next Friday, when we shall see & talk of your Friday morning which you will be at Ryde. Friday morning

I go to Ryde the morning & will be there tomorrow & probably [illegible] [illegible]

49
59

[illegible]

[illegible] organization.

[illegible] a [illegible] [illegible] in the [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] per [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

[illegible]

[illegible] that the [illegible] are not in [illegible] in there of [illegible] [illegible] but [illegible] very [illegible] [illegible] [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Yours truly,

General Manager.

87
104

Hill Sept 28 — 91

N. J. Sta Constituting the
Helena Bible Class Meeting
Mr.

You need not come to-morrow
but have anything in readiness
reading to-morrow Friday
morning

H M Lirow.

137

291

Nov 15 1890

P. F. Gilden Esq
Mt Olive N.J.

Dear Sir

I wish you could have
assisted to organize the church
at Flanders when the Synod
although I do not need the Synod
at Flanders still I think it would
succeed better than there.

Let me have some idea as to
how the Cause at Mt Olive go.

Yours truly
J. M. Hill Sec

141
196

November 22nd 1880.

Mr. Thomas A. Edison, President,

Orange, N. J.

Dear Sir:

I send you herewith under separate cover, a sketch showing the location of the belt separating machines and also the dynamo. You will remember that you informed me that it was necessary that you should have the distance between the dynamo and belt machines so as to determine upon the size of wire necessary to use. I wish you would give me this information at the earliest possible moment so I can order the wire and other necessary material immediately. Please do not fail to give me this information by the middle of next weekif possible to do so.

Yours truly.

General Manager.

194
200

December 9th 1880.

H. S. Perry, Esq., Treasurer,

N. P. R. R. Constructing works,

44 Broad St., City.

Dear Sir:-

In reply to your favor of the 8th, I beg to say that the bill of the Empire City Electric Co. for Telegraph Poles, is to be charged to Mr. Edison at cost. There will be a labor bill, also to be charged to him in connection with setting these poles up, and other work in connection with some experiments he proposes to try at Ogden. I have instructed the clerk at Ogden to keep strict account of all time of the men used on Mr. Edison's experiments, and at the end of the month to render same.

Yours truly.

H M Carr.

Car Fd. Manager.

195
279

December 8th 1890.

H. S. Perry, Esq., Treasurer,

Union Building, 61 Broad St., City.

Dear Sir:-

Enclosed find bill of taxes for the Sussex Iron Co.'s property at Ogden. My impression is that our Lease contain a clause whereby we are under no obligation to pay these taxes; although am not absolutely positive.

Yours truly,

General Manager.

234
213

Jan 19/91

Edison Phonograph Works

Orange N.J.

Gentlemen

I will call your attention to your order on further particulars of the Chicago delegation

197	Chi
206	Chicago
206	Chicago
207	Chicago
211	Chicago
212	Chicago
213	do

There is an error that seems due for you carefully checking your offices is this only or it is playing on a very uncomfortable footing the Belgian

is becoming very infested with rats
at my mill stealing the applies
Mills, I can only tell him in justice
to myself that a good deal of the
delay is caused by the delaying my
you have of filling an order.

You have cancelled the order
each you in January. If you adopt
mills be the same in future during
Mr. I do not see any prospect
of ever all the order filled unless
then the 1st of April

Yours truly

H M Lyon

Cal Mgr

112/288

Rec. Feb 1 1894.

N.Y. Jan 31.

J. F. Delany.
care N.J. & R. Cont. Works.
Lake Hopatcong. N.J.

I think Cranie's presence at Ogden is demoralizing. He had better be sent back here, however use your own good judgement.

H. M. Lora.

700

Jan 27/94

My dear Perry

It is simply ridiculous to think that we can get along in the small office adjoining in the Stein Building, just think of it, three desks, copying press, desk for clerk or boy, one for letter filing, what is needed is another office of same size to be occupied by you or myself. I do not think the Stein or the Cutting building is to be convenient another.

I do not see the necessity of our being on that floor if we cannot get proper accommodations, any other

flow to which we can get proper
accommodation will never pass as
well. I do not wish to bring any such
matter before the board, you & myself
myself certainly have the power to adjust
suitable quarters so long as we
do not go into any extravagance.

Yours Very
W M Finn
Esq.

Yours being on this floor I
get proper accommodation,

Feb 17.91

Mr Thos A Edison

Dear Sir

I presume you would like to know how we are getting along at Ogden, whether we are going along as well as I should like, being almost entirely to the weather.

Up to yesterday we might as well include yesterday as it was quite cold and windy and therefore outside work was hard under unfavorable circumstances, we have had at Ogden but one good working day since the 1st of February. Yf.

I were one of the weak kneed kind I should have been by this time a very discouraged man, I think by the time we get through with this winter seasons will come. Not at least in this section it has been the worst for years.

However in spite of this I still think we shall be able to start in somewhere about the time I last stated in my letter of the month provided we have any decent luck so far as the weather is concerned.

Mr Thomas writes me that he has written you to the effect

that we should change the two bell
Machines in the dust house to the
new style separators, now I do
not think it advisable to make
any further changes at present I
think it best to get along with what
we have got until we get some
money in from the business, if there are
any changes made now it will
simply prevent us from getting in the
Market for a considerable time to come
No matter what anybody may say to
the contrary. When do you expect to return
to Bangor?

Yours Truly Hill & Son

Letterbook, LM-202

This letterbook covers the period March 1889-May 1890. Most of the correspondence is by Thomas Butler, secretary of the company; Harry M. Livor, general manager; and William S. Perry, treasurer. There are also some letters by Samuel Insull, who was treasurer prior to January 8, 1890. Much of the correspondence deals with company financial obligations, stock transactions, stockholders' meetings, and personnel matters. Many of the letters concern the operation of the concentrating mill at Bechtelsville, Pennsylvania. Included is correspondence dealing with the supply of ore to the mill and with the disposition of machinery and other materials upon its closing. The front cover is labeled "The N.J. & Pa. Concentrating Works Letter Book." The book contains 895 numbered pages and an index. Pages 873-895 are blank. Less than 5 percent of the book has been filmed.

April 19th 9

Wm L B Eaton NY City

Dear Sir

The Hartell & Green property referred to in yours of yesterday is known throughout that section as the Gilbert farm, therefore I do not think it is necessary to make any change in the French Entered.

Respectfully yours

H M Lyon

Atty.

May 9th 9

Dr H. K. Hartzell.
Allentown Pa

Dear Sir

I trust you will remember your verbal understanding with me as to working with us in all the mineral mining properties you control or those which you can get control of in connection with the contracting business. You will remember that at the time the understanding was made with the Com

Dr Sir to work the Gap mine in conjunction with them, please let us hear from you on this point at early date.

Yours truly
Will Sims

May 22 1/19

Dr H Hartzell
Allentown Pa

Dear Sir

I am very much disappointed at the poor prospect of getting any quantity of ore in the immediate future. I do not see anything in the way of our starting up the mill, the latter part of last week or the, week following. We have shown on our part a desire to get the mill ready in the quickest possible time & have spared no expense, on the other hand you and the Brices have certainly not made the effort to keep up with us, the weather

of men you have had at work could do but little.

You will remember that in the last of April you said you would have 200 tons of ore from me to work on by the 1st of June, you will not have an quantity of that kind of ore that will be worth putting through the mill, in this I include the piles at the old opening on the top of the hill.

According to what you promised in your agreement with me you should by this time be in a position to furnish 100 tons daily or in a short time from this 200 tons daily but if I am to take what the Engineer says it will be a

very long time before we can expect
also two of us a day.

I wish you would write me
by return mail stating what one
may expect in the way of an.

Yours truly - Hill Lyon
Jr.

Mr Carl Dyson Esq May 31 1879.
Care Jno Ezekiel
Pattison & Co

Dear Sir

We will place ship to Edison Electric Light Co Lackawanna N.Y. 50 tons #1 Norway Oak & charge same to you price to be 18$ cash or better if you can secure lower rate of freight than 3$ per ton.

Yours Truly
H M Lyon

2-89

June 3rd/89

Dr A K Hartzell

Dear Sir

Mr Edison cannot go with me to the Elliot mine until Thursday afternoon, so will therefore be there Friday morning.

I would again call your attention to the very small way in which the mine is being worked on an about ready for business & you are far from ready to supply us with the agreed quantity of ore, nearly two weeks ago. I let the Grain know the men "kings" to me on Carmine stating however that you would immediately put on a sufficient force of men to give us a good supply of ore when we needed it

This lower was not done as you know. I urge upon you to take immediate action in this matter. I do not think our men receiving the treatment to which they are justly entitled.

Yours very truly
W M Lyon
Col Mgr

July 2, 1889.

Thos. Edison, Esq.,

Orange, N. J.

Dear Sir:

I enclose you a form of Agreement which I think would be worth the thing for the Pennsylvania parties to sign in connection with the purchase of mineral rights.

I think, however, that it would be wiser to make the purchase of those properties in some other name than yours. As soon as it became noised about that "Edison" was purchasing ore property in that region, it would be very apt to jump up prices. It would be better, I think, to do it in my name for this reason, or in any other name that you suggest.

Let me know what you think of this suggestion, and oblige,

Yours very truly,

H M Pirsson

Enc.

In consideration of the sum of

dollars receipt of which is hereby acknowledged, I agree to convey to Thomas A. Edison, his heirs or assigns, at the end of [illegible] months, the exclusive right to [illegible] ground on my land located in or near the village of [illegible] and I further agree to sign all necessary instruments to convey said right to said Edison, his heirs or assigns, when called to do so by the sum of

dollars.

The said Edison agrees to pay me at the rate of

dollars per acre for all land that may be rendered valueless for farming purposes through the mining operations of said Edison.

July 16 1879

Edison Machine Wks
Schenectady N.Y.

Gentlemen You will please ship to me at Bethlehem Pa the #6 Compound wound Dynamo.

We will return you the #3 we have now in use & you can pack it in shape as good as new, charge this cost to me & credit me with the dynamo.

As I telegraphed you yesterday I desire you to make the new magnet ordered with 50 lb more iron & 50 lb more copper. I shall also want a 6 H.P. Sprague Motor. I think will advise you later about this lower.

Yours truly
H M Dixon
Chief Engr.

Please advise me daily the time of pulling the #6 Dynamo & send it direct on cars

July 16, 1909.

Wayne McGlaun, Esq.,

Monroe, Ind.

Dear Sir:

I send you herewith all papers in connection with the purchase of our property near Rockcreekville from Mr. George G. Greiss.

You will notice that you have signed the Assignments of Contract of February 8th, 1909, but your signature is not attested to by a Notary, nor is there a witness to your signature. It is necessary for you to have the signature of these two Assignments attested before a Notary, after which please send one of them to me, which I will forward to Mr. Greiss, you keeping the other one yourself.

Kindly give this your immediate attention, and oblige,

Yours very truly,

HM Liver

Enc.

July 20, 1929.

Mr. [illegible],
[illegible],

Dear Sir:

[illegible] making Rotogravure in making the [illegible] that you propose to start up, it strikes us that it would be just as well to wait to large enough to use the dryer, as the expense of a dryer for at most other jobs is so, and would more than pay for the extra expense in making the larger Rotogravure. What do you think of it?

Yours truly,

N. M. Levin

General Manager.

July 15, 1888.

Mr Taylor, Esq.,

Jeffersonville, Ind.

Dear Sir:

We intend finishing upon the additional buildings on Monday next. Machinery will be at work Saturday night and in there Monday morning. I will you would arrange to come to have the two stone masons, who had run up previously, report on Monday morning, and about five or six of the old dancing gang.

Please do not fail on this as Mr Bohanna will immediately give them a job there in preference on Monday morning next.

Yours truly,

N M Pirrr

General Manager.

July 20, 1888.

Josiah Rolar, Esq.,

Pottstown, Pa.

Dear Sir:

You will please send your Carpenters, to the number of say ten, over to the Mill on Wednesday afternoon so as to commence work early on Thursday morning.

I wish you would also arrange to have the men arrange their matters so that they will not go home on the following Saturday night. If this is done they can undoubtedly get through by not later than two weeks from to-day. As you know, there is a great deal of time lost by the men leaving about noon Saturday and getting to work at noon Monday.

Please do not fail to attend to this, and oblige,

Yours truly,

General Manager.

July 30, 1888.

[illegible]

[illegible]

[illegible]

[illegible]

Dear Sir:

[illegible] in the operation of the magnet, [illegible] first-class man, who understands the matter, [illegible] at 1:30 train from this City, reaching [illegible] a little later than six o'clock in the evening. [illegible] with [illegible] all necessary changes to make the matter right.

I presume that you are working some of the rich Ore [illegible] the upper [illegible], but naturally you must be showing better results as [illegible] the amount of Concentrate being made.

I wish you would telegraph me on Monday morning as to about the quantity of Concentrate that you will be making by using this rich Ore, and as Monday intervenes, I wish you would send a letter to me giving me the record up to twelve o'clock. Be sure and get this letter in the mail that goes on the train leaving Schuylkillville at 2:45.

I also wish you to telegraph me what you are doing in the same particular on Tuesday morning. Send your telegram at eleven o'clock.

Dublin.

I hope to see the mine on next Monday morning.

The Portrush Rock Drill Co. undoubtedly consulted you before hand. Still, it is well that it be connected at once, so that there will be no excuse about operating it quickly. I am anxious to see this machine, but was under good impression that I would see the mine next Wednesday.

You have actually forgotten to advise me as to the consumption of equipment, number of drill weights, and how many wheelbarrows are used per day.

Yours truly,

General Manager.

Boise Ida, 1919.

[illegible]

[illegible]

[illegible]

July 28, 1889.

F.W.Gilson, Esq.,

N.J.P.Co.Concentrating Works,

Mechanicsville, Pa.

Dear Sir:

I wish to impress upon you the great importance of getting out sufficient Concentrate to fill the contract I made yesterday with Mr.Irwin, for ten (10) tons of Ore per day for the Mechanicsville furnace. It they start with a certain proportion of our Ore in their charge it is of the greatest importance that they should be in a position wherein they can keep up the same mixture all the time. If either they can keep changing every day or two, on account of not getting enough Ore to make changes every day or two, on account of not getting the quantity Irwin is necessary, it will cause great variation in the quality of metal from; therefore, I desire that you should leave no stone unturned to give them that quantity of Ore, even if you have to work over-time.

I enclose herewith a letter for Mr.Abram Benfield, which I desire to have delivered to him. Please attend to it immediately upon receipt. You will be careful to give it to the right Benfield. There are two or three of them in the neighborhood--brothers--, but Abram is the one the letter is intended for.

Do not fail to give this your attention immediately, and oblige,

Yours truly,

H.H.Lewis

General Manager.

July 23, 1888.

P.S.Gilmer, Esq.,

S.M.C.Co, Concentrating Works,

Bechtelsville, Pa.

Dear Sir:

I have just received your telegram in regard to the production of the mill. It does not come up to my anticipation, but I presume that under the present conditions it is the best you can do. I do not see but what you will have to work upon lean Ore when you can not get some of the richer Ore from the hole in the upper part of the hill. You must have plenty of this to work on as there is a good deal of it just back of the crusher house, besides the very large quantity that must be in the roll bins. I should think all told there must be certainly 400 or 500 tons in both places. For this reason I cannot understand the last of your telegram in which you say "at 1:30 P.M. you are waiting for Ore." I can only imagine that you must mean that you are waiting for Ore from the upper hole.

I wish you would see George (the foreman at the Mine) and tell him that I insist positively upon him putting on the two gangs in that upper hole. Tell him that we cannot stand any more of this nonsense--we have got to have Ore to enable the Mill to run, and that

(C)

There will be no obstacle being in the matter of putting on the full night shift, possible strike, as well as the mining and labouring men.

Be sure and help it as far in such a way as that he will understand that we ask you to do it.

Yours truly,

H W Piper

General Manager.

August 2, 1889.

F. Gilles, Esq.,

N.J. & Pa. Concentrating Works,

Bechkelsville, Pa.

Dear Sir:

I enclose you herewith a letter which I wish you would have sent to Mr. Abram Benfield.

I also wish you would telegraph me as early to-morrow as possible how the mill is working; what the results have been from the use of the 12-inch belt on the fine roll; how much concentrate you are turning out and its proportion to the tailings.

Please do not fail to do this, and much oblige,

Yours truly,

General Manager.

P.S.-

I enclose a bill from Messrs. Pierce & Thomas, which please "O.K." and return to me.

August 2, 1888.

Amos Hensley, Esq.,

[illegible], Ind.

Dear Sir:

I [illegible] receiving your papers by our lawyer that they are not made out right. I [illegible] have proceed with suit, and will push the claim to a settlement in the ordinary legal way, but I shall not be able to [illegible] the money as soon as I thought I should when I saw you last.

Yours truly,

Wm Lynn
[illegible]

August 1, 1899.

[illegible]

[illegible]

[illegible]

Dear Sir:

[illegible]

I received [illegible] a letter [illegible] of December 27 [illegible]

[illegible] Of course, you are [illegible] you are doing better than you have been [illegible] Every [illegible] should be in [illegible] shape.

[illegible] letter [illegible] rollers on the roller are working nicely, and do not wear [illegible] This is very satisfactory, but you do not think it is working to advantage the amount of product. [illegible] of course, is the thing [illegible] to keep, and the wear of the rollers [illegible] the [illegible] reproductions that the present [illegible] machine.

[illegible] would telegraph me on Monday morning [illegible] about how much the increase is.

I have ordered the more 12" [illegible] for the other set of five rolls. These ought to reach you by Monday, and I wish you would put them on that might if you receive them in time. I shall order the a 60" diameter, 8" face pulley to be put on the large rolls that take the crusher material. I have this ordered [illegible] 8" rubber belt. This pulley will not, however, reach you until the latter part of next week.

John Fitz

H. M. Lister

August 3, 1920.

[illegible]

[illegible]

Dear Sir:

[illegible] of the Carrier Pigeons, of which I am informed by [illegible] [illegible] Mark I will go with you to-morrow. [illegible] [illegible] [illegible] for a day or two at the [illegible] [illegible] I will wait until the latter part of the week, [illegible] before I will be there. In the meantime, of course, [illegible] I will see to getting the enclosed form [illegible] in readiness. If you need a bell one [illegible] telegraph to Phoenix [illegible] [illegible].

I [illegible] hope the complaint [illegible] have happened, especially [illegible] [illegible] with the mail [illegible] [illegible] [illegible] any way of making the matters satisfactory [illegible] [illegible] [illegible] at any expense. I [illegible] [illegible] [illegible] for any amount of money.

Yours truly,

[illegible] Gen'l Manager.

P.S.--If Mr. [illegible] should come over to-morrow tell him that in all probability I will be there on Friday, and would like to see him.

March 2, 1888.

Dear Sir:

[illegible]

Yours truly,

Hill Lum

General Manager.

August 8, 1922.

[illegible]

[illegible], Indiana, Ind.

Dear Sir:

Your favor of yesterday to hand.

I [illegible] that the freight to Schenectady was $1.75 [illegible] and we [illegible] the price of No.1 [illegible] to [illegible]. As you will know, we have not appreciated [illegible] and I do not think that our people at Schenectady will be willing to pay this price. Some price should not be, taking into consideration quotations received from other parties no more favorably situated than you are to Indianapolis, over $1.50 at the most. Sale rate was $1.75 freight would make $3.25 which I think would be more than price allowed. We are letting you a direct-class [illegible], as you will know, on a low price, and in return you certainly should make us a good price for $3.25 free on car mills anywhere else.

I am unable to see the [illegible] why they do not de-ive [illegible] you the Rector. I cannot understand why you have not received at least enough to keep you going as we had a considerable stock shaped up the time you gave us the order to deliver 10 tons per day to you.

Yours truly,

H M Lyon

Yukon,

any such order should happen, the drills for the 20-inch wells will in all probability, I think, and so did get the 20-inch drills back in the old place. Failing that would be well for the ground to send smaller drills, for a the company to have 15-inch drills, in case you get accordingly, for instance, so as to help save the wells. I should not think it would be worth while to put in a crusher, because that would be only temporary, and would probably not be so much good.

Yours truly,

H. M. Piper.

General Manager.

353/388

rew

Jan.11,1890.t

P.F.Gildea, Esq.,Supt.,

N.J.& Pa.Concentrating Works,

Bechtelsville, Pa.

Dear Sir:-

It has been arranged that we are to have returns from the Bechtelsville Mill daily and weekly. The daily returns, it is understood, must necessarily be approximate, but the weekly returns should, of course, be more or less exact. To carry out this idea I am having a Form prepared showing the amount of raw material delivered to the Mill and the percentage of Concentrate produced therefrom. It would be well if these returns should date back from say the 1st of this month.

I need hardly tell you that apart from the desirability from a business point of view, our contract with the Ore Milling Company provides that we shall keep an accurate account at the Mill for presentation, if necessary, to the Ore Milling Company.

You will please therefore make arrangements for carrying this into effect. As soon as the form is ready I will send you a draft and invite your criticisms thereon. In the meantime, if you

#2.

have the records by you, you might advise me of the amount of raw material sent into the Mill as from the 31st of October last. This of course will be more as a matter of information than contract record, as this of course will only date from the 1st of January.

Yours truly,

Thomas Rutter

Secretary.

324/403

Jan.13th,1890.

A.O.Tate Esq.,

Edison's Laboratory,

Orange, New Jersey.

Dear Sir:- [illegible] I return you herewith the two copies of the Sanborn-Ogden contract, with the Seal of the Company attached

It strikes me that I ought to have gone out to Orange to make [illegible] the attestation. Is it not usual for the Secretary of the Company to always appear as the attesting witness? I know Mr.Edison's signature well enough, but I could not swear that I saw him write it. If anybody else will do as well, of course it will save me the trouble of going out to Orange.

I enclose you herewith a letter from the Tax Department, with two blank forms for tax returns, for the Edison Electric Light Co., Europe, Limited.

Yours truly,

Thomas Butler

H15
H18

Jan.23,1900.

N.J. & Penna.Concentrating Works,

P.F.Gildea,Esq.,Superintendent,

Bechtelsville, Penna.

Dear Sir,-

This will serve to introduce to you Mr. W. S. Perry,the Treasurer of the above Company,who goes out to the Gilbert Mine for the purpose of agreeing upon some plan of rendering periodical returns of the Mine.

Please show Mr. Perry over the property and give him all the information at your command.

Thanking you in advance for your courtesy,I am,

Yours truly,

N M Lewis
General Manager.

417
421

Jan. 21st. 1896.

N.J.& Penna. Concentrating Works,

P.F.Gilles Esq.,Superintendent.

Bechtelsville, Penna.

Dear Sir:-

This will serve to introduce to you Mr. Thomas Butler, the Secretary of the above Company, who goes out to the Gilbert Mine for the purpose of agreeing upon some plan of conducting periodical returns of the Mine.

Please show Mr. Butler over the property and give him all the information at your command.

Thanking you in advance for your courtesy, I am

Yours truly,

H.M. Lyon.

General Manager.

418

422

January. 24 90

P. T. Gildea
N. J. & Penn. Lin. Dpt
Bechtelsville
Penna

Mr. Perry & myself leave Philadelphia for Bechtelville eight thirty tomorrow morning. Please meet us at station with wagon.

Thos. Butler
Secretary.

C o p y.

Orange, N. J. Jan. 27, 1890

Mr. H. M. Livor,

10 Dey Street, New York City.

Dear Sir:-

I have thought the Bechtelsville Mill business all over, and I think the best thing is that I take hold of the thing myself, assuming all responsibility. This will take the worry off your mind and you can then attend entirely to Ogden business. I want to do this especially, as in view of the extent to which I am going into mining that I want to learn the business from actual experience. So you had better drop a note to Gilder, and say you are so busy with Ogden, you can't give attention to Bechtelsville, and that Edison will come down in a few days and make different arrangements. I shall also see Hartzell and come to some serious understanding about the mine. Things must be changed. Answer if you understand.

Yours truly

(Signed) Thos. A. Edison.

Jan. 28th, 1890.

419
426

H.M.Dixon Esq., Manager,

19 Dey Street, New York.

Dear Sir:-

I return you herewith the letter from Charles Gilpin Jr., Esq., referring to the taxes on Scrub Oak mine for 1889

I am sending a check to the Collector of Taxes at Dover today.

The delay has been caused by the matter having been referred to Messrs. Eaton & Lewis---they having just furnished the information desired in regard to the matter.

Yours truly,

Secretary.

Enc. E.

THE EDISON MACHINE WORKS.

PRIVATE TELEPHONE LINE.

CONFIRMATION OF MESSAGE.

1674
73

NOTE—This confirmation should be checked with the original message immediately on receipt. It will be assumed to be correct unless advised to the contrary by telephone.

Name of Person Sending.	Name of Person Receiving.	Time.	Date.
Ware	Mr. Liver	3.25	Feb'y 3rd, 1891.

From whom received: Mr. Butler 114 Wall St.

To whom sent: Mr. Liver, 19 Gay St, N.Y.

I wish you would come at the earliest possible moment the price at which I am to bill the concentrate sold up to date, to Gabell, Jones & Gabell

Mr. Liver to Mr. Ware — same time

$14.25 per ton.

Feb. 12, 1890.

0 0 0

P.F.Gildea, Esq.,Supt.,

N.J.& Pa.Concentrating Works,

Bechtelsville, Pa.

0 0 3

Dear Sir:-

In your memorandum account of February 6th you show a debit against George Reichtner, for coal, powder, oil, caps, etc., amounting to $24.02.

As I am at a loss to know how to credit this material, I shall be glad if you will advise me by return mail whether these articles were supplied to Mr.Reichtner from the Mill or the Mine.

You also state that you dock him 40 cars for dirt sent, instead of stone in January. Please also explain this, and when and how we are to credit him for his work as Contractor. What particular work does he perform as Contractor? An early reply will oblige,

Yours truly,

Thomas Beetes

Secretary.

516
B36

Feb.14, 1890.

P.F.Gildea,Esq.,Supt.,
N.J.& Pa.Concentrating Works,
Bechtelsville, Pa.,

Dear Sir:-

I am in receipt of your favor of the 13th inst., with reference to the charge of $24.02 against Mr.George Reichtner, and note what you say in regard to the matter.

As you seem to be in ignorance as to the management of the Gilbert Mine, I will give you below the arrangement by which it was operated:

The arrangement by which the Mine was run, was that the Concentrating Company and Dr.H.K.Hartzell worked the Mine jointly. Hartzell undertook the working of the Mine, and at the end of each month he sent in a claim for one-half of the working expenses, and we always sent him a check for the amount. In return for our half there Dr.Hartzell was to receive one-fourth of the net proceeds from Concentrate .

It may be that you can collect the amount from Mr. Reichtner, but we have written to Dr.Hartzell asking him to do what he can to collect as he is the person who really settles with Mr. Reichtner.

Yours truly,

Secretary.

760
772

April 30th,1890.

N.J.& Pa.Concentrating Works,

P.F.Gilder Esq.,Superintendent,

Bechtelsville, Penna.

Dear Sir:-

I had a long conversation with Mr.Edison yesterday,and he fully agrees with me that it is useless for us to go on prospecting any longer.

Please,therefore,stop work; get the Drill in good shape and protect it from the weather. When you have done this,please see about selling the lumber and any other stuff as stores, which you may have .

Let me know as soon as you have done this. as we have other work for you elsewhere.

Yours truly,

Treasurer.

Digitized and Indexed
Sponsored by
EDISON TWIN LAKES

784
785

May 5, 1890.

Andover Iron Company,

J.R.Fell,Esq.,President,

240 So.3rd St.,Philadelphia,Pa.

Dear Sir:-

Referring to the Lease of January 24th, 1889, between you and ourselves for the Scrub Oak Mine, we beg to ask for an expression of your wishes on the following points:

(1) The Lease provides for the payment of royalties monthly, and further contains a guarantee on our part that the royalties shall amount to at least $1,505 a year, beginning February 1st, 1890. The fact is that we have not yet commenced to mine ore, although we expect to be under good headway within a short time, and we have no doubt but that before the end of the first year, that is to say, before February 1st, 1891, we shall have mined enough to have the aggregate royalties amount to at least the said guaranteed sum of $1,505. As we understand the Lease, we need not pay you any deficit as regards the guarantee until the end of the year. That is to say, if on January 31st, 1891, it appears that we have not paid you royalties to theamount of $1,505, we must then pay you the difference between $1,505 and the lesser amount of royalties we have

actually paid. Will you kindly inform us whether this construction of our obligation conforms to your own views.

(2) We would also like to know to whom and where the royalties, as well as the guaranteed amount are to be paid. If you will give us your instructions in this regard, we shall take pleasure in acting accordingly.

(3) In order to avoid any misunderstanding as regards taxes, which under the Lease we are to pay, will you please furnish us with a statement as to when the next taxes will become due, and as to what period they will cover, and give us now and hereafter such other information as may be necessary to enable us to perform our duties in this regard as required by the Lease.

Yours truly,

Sam Dumm

Vice President.

787
813

May 6, 1890.

P.F.Gildea,Esq.,Superintendent,

N.J.& Pa.Concentrating Works,

Bechtelsville, Pa.

Dear Sir:-

I duly received your letter of the 5th.

Please go ahead and have all supplies which you think should be shipped with the Mill machinery ready, so that when we decide to move the Mill we will know exactly where to find all said supplies.

Dismiss all men except the watchmen whenever you think necessary, as we do not propose to run the Mill again.

Not only sell the timber in the woods for $100, but all the cut timber there is there at the best possible price.

Also dispose of whatever coal you may have at the best price possible.

Also make a deal for the sand at the best price you can get, taking especial care not to render ourselves liable for any expense for freight or cartage in connection therewith.

Please fix it up so that a competent man will be left in charge of the property as soon as we send you instructions to come

-2-

East with the Drill.

Yours truly,

W. S. Kay

Treasurer.

Mr. J. Y. Bennetts
Tyler, Pa.

2 00 13

8/3
830

May 9th,1890.

N.J.& Pa.Concentrating Works,

P.F.Gildea Esq.,Superintendent,

Bechtelsville, Pa.

Dear Sir:-

Replying to your letter of the 8th,I enclose formal bills for the timber and old iron. As you are on the ground,it would be better,perhaps,for you to make the collections yourself,and send us a check after you have got the money.

Mr.Perry has been so busy for the past few days,that he has not been able to reply to your several letters. He has asked me to say to you that he is extremely pleased at the progress you are making in clearing the way for the removal.

I forgot to tell you,in a former letter,that it will not be necessary for you to order any wheels to make the boiler you have portable,as we can just as well get that done later.

I am much obliged to you for the information about the land. This,I think,will answer my purpose very well.

I shall hope to hear shortly,as to how you are getting along with the sale of the sand.

With reference to the other points of your letter,I will write you further tomorrow,after consulting with Mr.Perry.

Yours truly,

Thomas Dutton
Secretary.

Enc. N.O.

830

May 13th, 1890.

N.J.& Pa. Concentrating Works,

P.F.Gildea Esq ,Superintendent,

Bechtelsville, Penna.

Dear Sir:-

I have your favor of the 10th and am glad to learn that you are getting along so nicely with your arrangements for removing the Mill. I am the more pleased to find that you are so far advanced in your preparations,because in about a week or ten days we shall send you final instructions to come east with the Drill and boiler.

Please go ahead and see what you can get for the sand. You can readily understand that after you come east the difficulty in finding a purchaser will be very much increased; in fact, I should say it would cut down about half its value. Go ahead and see if you can't find somebody who will close the deal at once.

Referring to your inquiry with reference to the existence of the firm of Hartzell & Edison,I would say that there is no such firm at present in existence;therefore,whatever stores or supplies of any kind that you may have at the Mill or Mine,please consider the property of the New Jersey & Pennsylvania Concentrating Works, and dispose of it to the best advantage. Of course,when I say

841
709

P.F.G., 2.

dispose of it I naturally mean such as you have no use for and would be only so much lumber. Anything that you have use for, of course you will retain.

Yours truly,

W. Perry

Treasurer.

847

May 15th, 1890.

The Andover Iron Company,

Charles Gilpin, Jr.,Esq.,Treasurer,

240 South Third St.,Philadelphia,Pa.

Dear Sir:-

I have the pleasure to enclose you herewith check for $376.25, in payment of the guaranteed royalty on the Scrub Oak Mine for the months of February, March and April,1890.

Please sign the attached receipt, and return same to this office.

Yours truly,

Thomas Butler

Secretary.

Enc.

858

May 21, 1890.

Alex.Elliot, Jr.,Esq.,

First National Bank Building,

Paterson, N.J.

Dear Sir:-

Rferring to your letter in which you make inquiry whether you shall purchase the interest of Mr.Hare outright, I think you had better bring this matter before Mr. Edison when you see him next Monday. I mentioned it to him casually yesterday, but no decision was arrived at.

I wish you would let me know exactly what time you will be at Orange next Monday as I have obtained the leases approved from Major Eaton relating to the Lionau property. We can then complete the whole thing by getting Mr.Edison's signature to the leases, and you can take his acknowledgement of the same there and then.

Yours truly,

Dictated to and transcribed from the PHONOGRAPH

Letterbook, LM-204

This letterbook covers the period April-July 1891. Most of the correspondence is by Thomas Butler, secretary of the company, and William S. Perry, treasurer. Some of the letters are by Samuel Insull, vice president. The letters deal mainly with orders for ore concentrate, leases on mining property, and stock transactions. Some letters pertain to the disposition of property at the Bechtelsville mill, while others concern the acquisition of the Ogden Iron Co. A few items relate to the hiring of Henry W. Hart as general manager following the resignation of Harry M. Livor. The spine is marked "C." The book contains 998 numbered pages and an index of recipients and subjects. Approximately 5 percent of the book has been filmed. Most of the letters are written in very faint green ink and may be difficult to read.

ALF.

April 24, 1899.

W. K. Hartzell, Esq.,

Iron and Steel Co.,

Allentown, Pa.

Dear Sir:-

Referring to our interview, and arrangement arrived at yesterday in Philadelphia with yourself and Mr. Howe in relation to the selling of our Concentrates.

I now beg to confirm same which is as follows:-

1st. Companies excepted by Mr. Edison and not to be given to any brokers are the

Bethlehem Iron Works.

Pennsylvania Steel Co.

Lackawanna Iron & Steel Co.

The Cambria Iron Co.

2nd. Your District includes the whole of the Lehigh Valley, with the exception of Phillipsburgh, all Pottsville and Phoenix in the Schuylkill Valley, and all the Susquehanna District.

3rd. Mr. Howe's Territory is all the Schuylkill Valley, with the exception of Pottsville and Phoenix, and all the state of New Jersey

#2 W. K. Markwell, Esq.

All other Territories will have to be adjusted as the question arises.

The calculation to be ten cents per gross ton of Concentrate.

You are authorized to offer the ore now at seven cents per unit, F.O.B. Ogden.

We guarantee 55 units of iron. As to Phosphorus, we cannot at the present time, guarantee less than .050. (50/1000)%

If the above is as you understand it, please acknowledge and confirm.

Yours truly,

W. Fahey

Treasurer.

60
657

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

to the [illegible]

tors and [illegible]

[illegible] and obligt,

[illegible]

Thomas Butler
Secretary

ALP. May 5, 1891.

Department State Board of Assessors,

Trenton, New Jersey.

Dear Sirs:-

Herewith I beg to enclose, duly filled up,

assessment paper.

Yours truly,

Treasurer.

The following was not on letter, but is copy of particulars given on the assessment paper ——

What is the amount of your authorised capital stock? $ 500.000.
Into how many shares is it divided? 5.000
How many shares are full paid ? All that are issued.
How many shares are partially paid ? None.
What is the amount of your capital stock issued? $ 370.000.
What is the nature of your business? Mining & concentrating iron ore.
If manufacturing or mining, state location of works } Ogden, Sparta Township. }
What is the amount of your capital invested in manufacturing or mining in New Jersey.? $ 280.000.
What is the assessed valuation of your real and personal estate used in manufacturing or mining in New Jersey. ? $ 23.500.

(Signed)

Enc. W.S.Perry.

128
183

Mr. May
O. J. Conley
Cor. Secretary Mass.
Williams Point Cable Repeating
N. J.

Mr. Edison myself & Young
will send Battelle
to Morris Morning at
ten. Profity Cable as Mass

H. M. Pope

COPY.

H. McIvor General Manager

[illegible] Tuesday.

Dear Sir:-

I have this day ordered from the Edison [illegible] for Ogden, wound [illegible] volts. [illegible] order them [illegible] to see Mr. Kennally for [illegible] order to be pushed. This order was given to me by Mr. T. A. Edison, President.

Yours truly,

W. S. Berry

Treasurer.

Hartford 1/9/91 76

Mr. Will Allen &c
Albany N.Y.

Dear Sir

We have to not forward
to you for the Sam Belt
Machine now for 125 volts
& 2 for the #32 Dynamo
which should be 150 volts.

We think they that the
engine to run the #32 Dynamo
will be adjusted on getting the
belt.

Yours &c
Wm Sellers & Co
G.M.

May 9, 1891.

Arthur W. Howe, Esq.,

607 Drexel Building,

Philadelphia, Pa.

Dear Sir:-

I beg to confirm the following telegram.
"If you can send in Howe's order for one hundred fifty tons to us by Monday, P. M., will accept it."

As I wrote you the other day, We have sold the Bethlehem Iron Company, 100 tons commencing delivery Monday next, at 7 3/4 ¢ per unit, F.O.B at the Mill. We have promised them that we would not sell to any other party at a lower price from this date.

We only accept Howe's order as ~~we consider~~ which we now confirm, "Until further notice, our best quotation at Mill on Concentarte will be seven and three quarter cents per unit. Please act accordingly."

With regard to your letter of the 8th, I can only say that we have made some mistake with you about the Cambria Iron Co.

On April 24th, I wrote ~~the following letter~~ to H.K. Hartzell. Enclosed please find a copy of letter. I was under the impression that I had written you one, of which the ~~following~~ is the substance. I cannot find a copy of any letter to you on this subject, and I presume I have overlooked it. I am exceedingly sorry that such a thing has been done.

Yours truly,

W. Perry

Treasurer.

P. S.
Mr. Edison excepts the Cambria Iron Co., and has done so from the beginning.

163

162
16

April 24th, 1891.

Arthur W. Howe, Esq.,

607 Drexel Building,

Philadelphia, Pa.

Dear Sir:-

Referring to our interview, and arrangement arrived at yesterday in Philadelphia with yourself and Mr. Hartzell in relation to the selling of our Concentrates.

I now beg to confirm same which is as follows:-

1st. Companies excepted by Mr. Edison and not to be given to any broker are the

Bethlehem Iron Works.

Pennsylvania Steel Co.

Lackawanna Iron & Steel Co.

The Cambria Iron Co.

2nd. Your territory is all the Schuylkill Valley, with the exception of Pottsville and Phoenix, and all the state of New Jersey.

3rd. Dr. Hartzell's district includes the whole of the Lehigh Valley, with the exception of Phillipsburg, also Pottsville and Phoenix in the Schuylkill Valley, and all the Susquehanna District.

All other territories will have to be adjusted as the question arises.

The commission to be 10 ¢ per gross ton of Concentrate.

You are authorized to offer the ore now at seven cents per unit, F.O.B. Ogden.

We guarantee 65 units of iron. As to Phosphorus, we cannot at the present time, guarantee less than .050 (50/1000ths).

If the above is as you understand it, please acknowledge and confirm,

Yours truly,

(Signed) W. S. Perry.

Treasurer.

176
214

This telegram was sent by Mr Perry from Dwg. N.J. Tuesday evening

May 19, 1891.

Thomas A. Edison,

Care Edison General Electric Company,

Rialto Building, Chicago.

Have arranged with Richards to meet us at Philadelphia, June first with majority of his Board when Stock will be delivered, his Board will resign, we pay money and take possession of Company. His Stockholders have all agreed to sell but have not sent in their Certificates. He will get them all by June first.

W. S. Perry

W.M.

May 13th, 1897.

Mr Alexander Gilliat,

Takoma, N. J.

Dear Sir :-

I wired you today to send on immediately, a synopsis of the leases, that signed by Mr Edison. I fear the delay which has arisen, arises from the fact that you are making full copies of all the documents. This on reflection, I consider quite unnecessary, not only on account of the delay, but the expense. All I need to be furnished with, is the date of the leases, names of the parties, the amount of the rentals, and the name of the mine.

As I told you at the time that Mr Edison signed the leases, I was very much disappointed that you did not bring this information with you in accordance with the understanding which we had previously come to. The absence of this necessary information places me in a very awkward position. I arranged definitely with Mr Edison that this synopsis was to be ready at the time he signed the leases, and were he now to ask me what records I had, would place me in a very awkward position.

I have spoken to Mr Perry on this subject, and as I shall be leaving for Europe within the next fortnight, I have

205
21 8

Arranged with him that on his account is to be to let Mr Edison sign any more leases unless the particulars which I have asked for are placed upon the line , for the records, at the time the documents are executed .

I trust therefore that you will in future , bring these particulars along , and so avoid grounds for any further complaint.

Yours truly ,

Thomas Pratt

Secretary .

Mr Ems .

227
-01

ALP.

May 15, 1891.

Charles Gilpin, Jr., Esq.,

240 South Third Street,

Philadelphia, Pa.

Dear Sir:-

This Company is about closing the Purchase of the Ogden Iron Company's Stock. Our Attorneys, Messrs. Eaton & Lewis have suggested that I engage some Philadelphia accountant to go through the books of said Company and make us a written report as to how the books have been kept, what indebtedness they show as now existing, whether everything has apparently been entered on the books, what the last financial statement made by the officers of the Company showed as regard then existing indebtedness, together with any other matters which the accountant may think are pertinent, to the end that we may be fully satisfied as to the present financial condition of the Company, particularly as regards indebtedness. We expect to pay for the Stock and take possession of the Company on Monday, the 1st of June. The contract is that the Company is to be turned over free and clear of all indebtedness, and free and clear of clouds and litigation.

Yesterday I was at the Company's office and met Mr. John Fell of your city, and asked him if he could recommend me some gentleman who could make me the report that I want. He suggested your name, and gave me your address. If you feel like taking hold of this matter please let me know as we would like the report not later than the 21st.

Yours truly.

If you conclude to examine the Ogden Books consider this your order for report. W. L. Perry

W L Perry

Treasurer.

Jo Inc.

2567

May 19/91

The Bethlehem Iron Co
South Bethlehem
Pa.

Gentlemen

Your favor of the 14th inst. in receipt & beg to say that our understanding is that the order is for one hundred thousand (100,000) tons of Concentrate to be not less than sixty-five (65) units of iron & not more than .040 phosphorus, & the price delivered at Bethlehem 8½ cents per unit. Deliveries to be one hundred tons per day and up to two hundred tons daily as you may require, & such additional quantities as we can spare should a greater amount than two hundred tons daily be wanted.

That either party at any time upon twenty days notice the shipments may cease at the end of said twenty days, & the balance of the

(2)

Wher cancelled. That either party on account of accidents, strike, fire or causes not controllable, may cease shipping or receiving ore until the difficulties are removed.

Thomas A. Edison

168
340

MLP.

Mar 30, 1891.

Wm. Richards, Esq.,

Dover, New Jersey.

Dear Sir:-

We have had an expert examining the books of the Ogden Iron Company in Philadelphia, and he makes the suggestion that we should advance to the Company $2343.21 some days before the 1st of June, in order that Mr. Wilson, the Treasurer, can close out the liabilities that your Company has. If this suggestion meets with your approbation, we will send check for the amount, either to you or the Treasurer, Mr. Wilson as you wish, this payment to be made on account of the $75,000.00 due June 1st.

Trusting to hear from you in this matter,

I remain,

Yours very truly,

W. S. Perry

Treasurer.

No Enc.

2144
286

ALP.

May 20, 1891.

Thomas A. Edison, Esq.,

Orange, New Jersey.

Dear Sir:-

Herewith I send you report of the crushing done at the Ogden Mill, from the commencement to and including the 18th inst. From this out I will send you daily report on form which I have had specially prepared for doing so and hope it will be satisfactory to you.

Yours truly,

W. L. Perry Jr.

Treasurer.

REPORTS OF CRUSHING.

OGDEN WORKS.

August 1890 to May 15, 1891.

Copper.				Ogden.			
Mine.		Bank.		Mine.		Bank.	
Date.	Tons.	Date.	Tons.	Date.	Tons.	Date.	Tons.
Aug. 1890.							
25,	300					27,	133
26,	250					28,	70
27,	344					29,	58
28,	337					30,	150
29,	341						
30,	322						
Total	2034					Total	411
Sept. 1890.							
1,	148	1,	18			1,	109
2,	270	2,	123			5,	133
3,	313					8,	97
4,	465					9,	15
5,	292						
6,	232						
8,	195						
Total	1915	Total	141			Total	354
March 1891.							
16,	50					19,	75
17,	200					20,	35
18,	264					24,	190
19,	330					25,	80
20,	324					26,	13
24,	165					31,	10
25,	254						
26,	277						
27,	340						
28,	57						
30,	283						
31,	266						
Total	2855					Total	366
	2034						411
	1965						354
	2855						366
Total	6904		141				1131

REPORTS OF CRUSHING.

OGDEN WORKS.

For the Month of April, 1891.

Coplay.				Ogden.			
Mine.		Bank.		Mine.		Bank.	
Date.	Tons.	Date.	Tons.	Date.	Tons.	Date.	Tons.
1,	207	23,	57			1,	37
2,	341	24,	35			2,	75
3,	91	25,	24			3,	51
4,	62	27,	59			4,	90
6,	307	28.	66			6,	95
7,	157	29,	12			7,	113
8,	443	30,	18			8,	139
9,	458					9,	163
10,	446					10,	113
11,	349					14,	101
15,	323					15,	118
16,	429					16,	123
17,	490					17,	124
18,	422					18,	115
20,	454					20,	81
21,	255					21,	97
22,	399					22,	84
23,	333						
24,	459						
25,	292						
27,	516						
28,	497						
29,	282						
30,	306						
Total	9009	Total	321			Total.	1852

OGDEN WORKS.

Coplay Mine.

Date.	Tons.	Avg. % Iron.	Avg. % in Tailings.
May 1.	317	23.85	Mill # 1, 2.93 Mill # 2, 2.42
May 2.	[illegible]	21.34	Mill # 1, 2.69
May 3.	[illegible]	21.47	Mill # 1, 4.16 Mill # 2, 2.12
May 4.	[illegible]	15.9	Mill # 1, 2.6 Mill # 2, 6.21
May 6.	287	18.47	Mill # 1, 5.09 Mill # 2, 2.51
May 7.	380	18.08	Mill # 1, 2.81 Mill # 2, 2.52
May 8.	307	18.75	Mill # 1, 3.39 Mill # 2, 2.91
May 9.	498	24.14	Mill # 1, 2.69 Mill # 2, 3.07
May 11.	389	20.45	Mill # 1, 2.76 Mill # 2, 2.81
May 12.	427	17.84	Mill # 1, 3.40 Mill # 2, 2.83
May 13.	416	18.32	Mill # 1, 5.13 Mill # 2, 2.58
May 14.	397	19.66	Mill # 1, 4.14 Mill # 2, 3.14
May 15.	557	23.84	Mill # 1, 3.88 Mill # 2, 2.33
May 16.	X	X	X
May 18.	595	17.27	Mill # 1, 4.40 Mill # 2, 2.57
	5623		

Nothing crushed from the Ogden Mine.

Total Tons

Sheet 1. — 6904
" 1. — 161
" 1. — 1131
" 2. — 9009
" 2. — 327
" 2. — 1852
" 3. — 6623
24981

Total 24,981 Tons

ALF.

May 26, 1891.

H. H. Wilson, Esq., Treasurer,

Ogden Iron Company,

[illegible] Third St.,

Philadelphia, Pa.

Dear Sir:-

In accordance with the suggestion by yourself to Mr. Charles Gilpin who examined the books of your Company, that we advance you the sum of $2343.21 to pay the liabilities of the Company. We enclose you herewith our check No. 752 on Chatham National Bank for the above sum, so that you may be enabled to do this and present a clean sheet when we make the final transfer.

Yours truly,

W. D. Perry

Treasurer.

Enc. 1.

ALP.

May 27, 1891.

E. S. Moffat, Esq., General Manager,

Lackawanna Iron & Steel Company,

Scranton, Pennsylvania.

Dear Sir:-

Your favor of the 21st inst. inst., to Mr. Thomas A. Edison has been turned over to us.

We were very glad to get it and we like to hear that the ore can be worked without loss and that it makes good iron.

Trusting that you in the future can use some of it from us, I remain,

Yours very truly,

W. J. Perry

Treasurer.

No Enc.

432
484

June 3, 1891.

Isaac G. Johnston & Co.,

Spuytenduyval, N. Y.

Dear Sirs:-

The writer is now prepared to furnish a substitute for ground Coke, sample of which I will send you at any time you are in the market. It is a bi-product of the New Jersey & Pennsylvania Concentrating Works, and looks and works as if manufactured expressly for your use.

Yours truly,

New Jersey & Pennsylvania Concentrating Works.

John Parker

See Cal. 1853 Cortlandt

June 4, 1891.

I. P. Pardee, Esq., Superintendent,

Musconetcong Iron Works,

Stanhope, New Jersey.

Dear Sir:-

Your esteemed favor of the 27th ult., addressed to Mr. Conley has been forwarded to this office and contents fully noted.

We would be much pleased to have your Company as customers, but in justice to those at present using our Concentrates as well as ourselves, it is not possible for us to make a sliding price to meet the exigencies of various consumers.

The lowest contract price we can name is 8 1/4 ¢ per unit, delivered on cars at Stanhope; this is figured on the basis of $4.75 per gross ton, F.O.B. cars at our Works, Ogden, with freight, 60 ¢ per gross ton added. For delivery at Secaucus, it would be $4.75 and freight 85 ¢ per gross ton. Terms, cash, thirty days. We guarantee 65 units of iron and not more than four one hundredths (.04) of Phosphorus.

That you may have an opportunity of trying our Concentrates with a view of arriving at its adaptability to your purposes, we will, if you so desire it, ship you a sample lot of 100 tons, to be paid for by you at such price as you may put on it after testing, with the understanding that any further orders shall be on price quoted above, viz: $4.75 per gross ton, F.O.B. cars at Ogden, until further notice from us.

Awaiting your reply, I am,

Yours very truly,

W. C. Reis

TREASURER.

No Enc.

460
462

C O P Y .

THE BETHLEHEM IRON COMPANY.

South Bethlehem, Pa., May 20th, 1891.

New Jersey & Pennsylvania Concentrating Works,

Edison Building, Broad Street,

New York, N. Y.

Gentlemen:-

Replying to your favor of the 19th instant:-

We will be glad to have you enter our order for 100,000 tons of your Concentrated ore on the following terms and conditions:- The ore is to be guaranteed to contain not less than 65% of iron, and not more than four one hundredths of one per cent.(.04) of Phosphorus. The price is to be $ 1/2 ¢ per unit of metallic iron, delivered f.o.b. cars our furnaces, South Bethlehem, Penna., provided that if at any time before the completion of this contract you should sell ore to any other parties at a price that would net your Company less at your Works than the price charged this Company nets you, you are to make a corresponding reduction in the price to us; and provided also, that if experience in working this fine ore in the furnaces show that a portion of the ore is carried off without melting,

" and cannot be saved "

a corresponding reduction shall be made from the manifest weights of ores shipped. The ore is to be delivered at the rate of 100 to 200 tons per day, as we may require it, and faster if we so

desire and you can spare it. We to have the right at any time by giving you 20 days notice, to have shipments cease at the end of the 20 days and to cancen the balance of the order,

" and you are not to be called upon to fill the order if it is impossible for you to do so."

If these terms are satisfactory to you, please confirm them and oblige,

Yours truly,

THE BETHLEHEM IRON COMPANY,

(Signed) R. P. Lindermann,

President.

to 450/470

June 6, 1891.

J. F. Walsh, Esq.,

New York City.

Dear Sir:-

Referring to the conversations which you have had with the officers of this Company respecting the disposal of the product of our Ogden Mill which is known as "Dust" I beg to say that we are prepared to make with you the following arrangement.

In order to render the matter more clear, I will state that the original dust product of our Mill is susceptible of being made into two kinds, viz: "sand flour" and "iron flour"; the "sand flour" containing only a small percentage of iron, the "iron flour" containing a large percentage of iron.

F I R S T . You are hereby authorized to sell for our account and in our name the two products now known as "sand flour" and "iron flour".

S E C O N D . You are to obtain for these the best possible prices per ton, and in no event whatever are you to offer the products for sale at a price which will net us less than twenty-five cents (25 cts.) per ton for sand flour and three dollars ($3.00)

per ton for iron flour F.O.B. cars at our Ogden Mill.

T H I R D . This letter does not confer any power upon you to enter into written agreements on behalf of this Company or to attach its name to other than the ordinary routine correspondence of your department, it being distinctly understood that all papers by the terms of which this Company is required to assume any obligation respecting the delivery of stated quantities of the said dust product or specified dates for the delivery of same, or otherwise, shall be submitted for the approval and signature of its regularly authorized officers and shall not be binding upon the Company unless so approved and signed.

F O U R T H . Respecting the prices at which the said dust product shall be sold to ultimate purchasers, it is hereby agreed that all sums received by this Company beyond and in excess of the prices named in the Second Section hereof i.e. twenty-five cents per ton for sand flour, and three dollars per ton for iron flour, F.O.B. cars at the Ogden Mill, shall be considered as gross profit and after deducting from said gross profit such legitimate expenses as may be chargeable by this Company against your selling department, the balance, if any, shall constitute the net profits of the department, and the said net profit, if any, shall be divided equally between yourself and this Company, that is to say, one half to you and one half to the New Jersey & Pennsylvania Concentrating Works.

F I F T H . We will account to you on the twentieth day of each month for all sales made through your department during the

per ton for iron flour F.O.B. cars at our Ogden Mill.

T H I R D . This letter does not confer any power upon you to enter into written agreements on behalf of this Company or to attach its name to other than the ordinary routine correspondence of your department, it being distinctly understood that all papers by the terms of which this Company is required to assume any obligation respecting the delivery of stated quantities of the said dust product or specified dates for the delivery of same, or otherwise, shall be submitted for the approval and signature of its regularly authorized officers and shall not be binding upon the Company unless so approved and signed.

F O U R T H . Respecting the prices at which the said dust product shall be sold to ultimate purchasers, it is hereby agreed that all sums received by this Company beyond and in excess of the prices named in the Second Section hereof i.e. twenty-five cents per ton for sand flour, and three dollars per ton for iron flour, F.O.B. cars at the Ogden Mill, shall be considered as gross profit and after deducting from said gross profit such legitimate expenses as may be chargeable by this Company against your selling department, the balance, if any, shall constitute the net profits of the department, and the said net profit, if any, shall be divided equally between yourself and this Company, that is to say, one half to you and one half to the New Jersey & Pennsylvania Concentrating Works.

F I F T H . We will account to you on the twentieth day of each month for all sales made through your department during the

month directly preceding, and will pay over to you such sum as may then stand on our books to your credit, but it is distinctly understood and agreed that we shall only be required to pay you your legitimate share of whatever monies we may ourselves actually have received on account of the sales of your department for the said period; the remainder to be paid when and as received by this Company. The accounting for each month shall be final, that is to say, no one month shall be averaged against another in computing the profits of your department, but each shall stand by itself and settlement shall be made accordingly.

S I X T H . We will allow you to draw the sum of fifteen dollars per week against your share of the net profits of your department, the sum so drawn to be deducted therefrom at each monthly settlement.

S E V E N T H . This Company shall not be liable for any expense incurred by you, except as it may authorize from time to time in writing and in the event of such authorization, it is understood that the same shall be chargeable against and shall be deducted from your share of the profits of your department.

E I G H T H . This Company reserves to itself the right to refuse to sell its said products to any proposed purchasers of whom it does not approve.

N I N T H . This agreement shall continue in force for the period of six months from the 1st of June, 1891. If at the end of that period the business herein contemplated has been found

of sufficient profit in the opinion of this Company to warrant its continuance, a new agreement upon the same general lines as this present agreement, subject to such modifications as may in the interim be deemed requisite, shall be entered into with you and shall cover a period of not less than three years from its date of execution.

T E N T H . In consideration of this Company giving you the exclusive right to handle and sell the aforesaid "sand flour" and "iron flour", and the benefit to be derived therefrom by you, you are to give diligent and faithful service in the pushing of said sales and marketing of said product.

Yours truly,

W. S. Berry

T R E A S U R E R .

463
584

New Jersey and Pennsylvania Concentrating Works

New York June 11, 1891.

R. P. Linderman Esq., President,

Bethlehem Iron Company,

South Bethlehem, Pa.

Dear Sir:-

Your favor of the 6th inst., was duly received and forwarded to Mr. Edison. He returns it to us this morning and says to add to the words,

" And cannot be saved "

" In the dust machine "

He also says,

" Explain to Mr. Linderman that a very small per cent is found in the dust flues and this is used over again. The amount lost in the air is so small that it will not exceed five cents per ton or less."

Trusting that this explanation of Mr. Edison will be satisfactory and awaiting your further advices, I remain,

Yours truly,

W. J. Perry

Treasurer.

No Enc.

The Pennsylvania Concentrating Works.

New York, June 13, 1891.

William Search Esq.,

Milton, New Jersey.

Dear Sir:-

We are informed from our office at Ogden that you have been employed for the past eight years in taking care of the Ogden Iron Co's property. As we now own that property, we would like to retain you in your position at the same rate, which I understand is $12.00 per month. If that is satisfactory to you, kindly inform us and we will put your name on the pay roll at that rate.

Yours truly,

W. S. Perry

Treasurer.

W. Ind.

EDISON GENERAL ELECTRIC CO.

OFFICE OF SECOND VICE-PRESIDENT.

PRIVATE LINE

CONFIRMATION OF MESSAGE

503
568

NOTE. This confirmation should be checked with the original message immediately on receipt. It will be assumed to be correct unless advised to the contrary by telephone.

Name of Person Sending.	*Name of Person Receiving.*	*Time.*	*Date.*
Young.	W. E. Gilmore.	[illegible]	[illegible] 189

From whom received, W. E. Gilmore,

To whom sent, H. M. Livor,

How shall we ship the wire to Ogden to repair the large magnet that has burned out? There is a total of 1800 pounds which will be made up on 8 drums, containing 212 pounds each, a portion of which will be ready to-morrow and the balance will be hurried and shipped later in the week. Shall we ship by freight or express. Answer.

JMC

June 16, 1891.

H. M. Livor Esq., General Manager,

Ordenaburgh, New Jersey.

Sir:-

Referring to our conversation in regard to the necessity of introducing economies and reforms at our Works, I have to request that you commence at once to ascertain what men there are now employed in the different departments of our Mill, whose services can be dispensed with.

It occurs to me that the number of men so employed are entirely out of proportion to the quantity of ore that has been crushed up to this time. Looking back, the net results are very unsatisfactory.

Awaiting an early reply,

Your obedient servant,

Lawrence Durell

Vice President

539
836

June 17, 1891.

R. P. Linderman Esq., President,

Bethlehem Iron Company,

Bethlehem, Pa.

Dear Sir:-

Your favor of June 15th is at hand. I have submitted it to Mr. Edison and he says to do as you suggest, that is, leave the whole matter open for future adjustment, when by trial you have determined what would be a fair proportion to deduct from the weight of the ore on account of said loss.

Yours truly,

W. H. Berry

Treasurer.

Ho Enc.

June 17, 1891.

H. M. Livor Esq., General Manager,

Ogdensburgh, New Jersey.

Dear Sir:-

In reply to your favor of the 15th inst., about engaging a clerk.

At our meeting, Saturday, it was arranged that the clerical work at the Mill should be under the control of this office. Therefore I do not understand why you should have interfered in a branch of the business that is not under your control.

Yours truly,

W. C. Perry

June 20th, 1904.

Mr. Henry T. Hunt Esq.,

Paterson.

Dear Sir:

I hereby instruct you to go to Ogden and take charge of our Mill and work there.

All employees at Ogden will report to you as per enclosed notice issued by me to-day.

You will have full control of the business at the Mill, but will confer from time to time with our Treasurer, Mr. Perry.

All goods required should be requisitioned for by you on this office.

New Jersey & Pennsylvania Concentrating Works,

by Samuel Dowell

Vice President.

664
671

JUNE 20TH, 1891.

NOTICE.

TO THE EMPLOYEES OF THE

NEW JERSEY & PENNSYLVANIA CONCENTRATING WORKS.

THE GENERAL MANAGER, MR. H. M. LIVOR, HAVING RESIGNED, MR. HENRY W. HART HAS BEEN PLACED IN CHARGE OF THE WORKS AT OGDEN, AND ALL EMPLOYEES WILL REPORT TO HIM UNTIL FURTHER NOTICE.

NEW JERSEY & PENNSYLVANIA CONCENTRATING WORKS.

BY Samuel Dunell
VICE-PRESIDENT.

669

662

686

D. F. 216
5-91—8000

EDISON GENERAL ELECTRIC CO.

OFFICE OF SECOND VICE-PRESIDENT

PRIVATE LINE.

CONFIRMATION OF MESSAGE.

NOTE This confirmation should be checked with the original message immediately on receipt. It will be assumed to be correct unless notice is given to the contrary by telegraph.

Name of Person Sending.	*Name of Person Receiving.*	*Time.*	*Date.*
D M.	Folson	11:15	6/20 189

From whom received, Mr Samuel Insull Second Vice President .

To whom sent, Mr Thomas A. Edison .

I am very glad that you are going to Ogden. All matters will be arranged here today. Mr Perry & Hart go to Ogden this afternoon . They will spend the night in Dover . I presume you will also . Please let me know .

Reply .

I will spend the night at Dover .

Thomas A. Edison .

July 1st, 1891.

E. S. Perry Esq., Treasurer,

Ogden, New Jersey.

Dear Sir:-

I beg to confirm my telegram of this date to you. "Give me how matters stand at the Mill. No report either yet went there. Also write fully to-day. You are as bad as Livor so far as supplying information is concerned".

I was very much disappointed when I returned from Schenectady this morning, not to find any letter from you or Mr. Hart with reference to the work at the Mill. I am naturally very anxious that the criticism so often passed upon our former General Manager, should not apply to the parties now in control of our Works at Ogden, but that the office should be advised from time to time as to what is going on.

I will write Mr. Hart by this mail, asking him to write a letter daily to the office upon general topics.

Yours truly,

Samuel Dodge

No Thc.

692/697

July 1st, 1891.

Henry H. Park, Esq.,

Ogden, New Jersey.

Dear Sir:-

I shall be glad if you will write addressed to this office, a general letter as to the progress at the mills, both as to what you are doing yourselves, also as to what Mr. Edison is doing. Of course, with relation to the latter, I understand he is looking after the mechanical part, but I have no doubt but that you can manage to give us some idea of the work he is doing.

Please address your letters to this Company so that in the event of my not being here, the parties in the office will open them for me and be informed as to what is going on.

I propose sending copies of the same, from day to day, to Mr. Cutting while he is in Saratoga.

Yours truly,

Samuel Insull

Vice-Pres. Edison Co.

No Enc.

New York, July 3rd,

Mr Thomas A. Edison, Menlo Park, ~~Orange~~, N. J.

I am going to see Willard tomorrow morning. He will want full information from you about electrical railroad experiment. Wire me very fully at once what I shall say to him.

SAMUEL INSULL.

717

~~71x~~

718

July 8, 1891.

Henry W. Hard Esq.,

Agent, Edison Electric,

Salt Lake City.

Dear Sir:-

I duly received your favor of the 2nd inst. I know you must be very busy indeed, but if you can manage to write a letter daily to this office, I shall be very much obliged to you. Please address it to the Company and not to myself.

With reference to Mr. Edison's request that we should find a man to take the place of Mr. Jackson, the electrician, I have arranged with Mr. Krasel, to send a young man, named, H. F. Hinsley to Ogden on Monday, with instructions to report to you. Please explain to Mr. Edison, that if the young man does not suit, he is to be sent back to Schenectady.

In sending your orders for material, please address telegrams or letters to the Company and not to me. Ask Mr. Edison to do the same. I have made arrangements that they will receive prompt attention.

H.W.H. 2 July 3, 1891.

717
722

Do not fail to send [illegible] to Schenectady for outlays as the Edison General Co. have done out of that line of business. If the orders are sent here, they will be attended to promptly.

I am leaving tomorrow for Chicago and will not be back for 2 or 3 days, but Mr. Perry will know how to get at me if it should be necessary to do so.

I am very anxious indeed, to know exactly how everything stands. Whatever old bills can be found around the Works, should be checked and sent in immediately. I think it is important that we should have statements of Stock also, as soon as possible.

I note what you say about the discharge of Mr. Dalzell.

Mr. Perry informs me that Mr. Schwartz has been appointed in his place. You should be particularly careful to see that Schwartz has his salary arranged. Please bear in mind the desirability of economizing on this class of help, by having all salaries fixed. If you should not agree with Mr. Edison as to what the salary should be, do not hesitate to tell him so.

Yours truly,

Sam Insull

Vice

756
757

N. Y. Office,
Mr. Hart.

July 6, 1891.

Herewith list of tools, material etc., shipped by Gilden from Bechtelsville to Ogden in two cars.

Also list of tools, etc., remaining at Bechtelsville.

Please show these to Mr. Edison and oblige.

Yours truly,

W. D. Perrine
Bros.

Enc.

746

829

July 8, 1891.

P. M. Gillan Esq.,

Newvil, New Jersey.

Dear Sir:-

Your favor of the 7th is at hand with receipts enclosed, all correct.

I now write you to ask if you can go to Bechtelsville and have boxed and shipped to Ogden, N. J., all machinery and tools that we have there. If you cannot go, will you kindly notify me, so that I can engage some one else. If you go, send all bills for expenses, as well as bill for your own time, here, and I will send you check .

Yours truly,

W. S. Berry

TREASURER.

No copy.

Rep 16

787
87

July 10th, 1891.

Edison General Electric Co., Eastern District,

Charles D. Shain Esq., District Manager,

Edison Building, Broad Street, City.

Dear Sir:-

In connection with our order to you for

1 10 Arc Light Dynamo,

please send,

11 Arc Lamps, with Hoods,

1000 Carbons.

Yours truly,

W. L. Berg

Treasurer.

No Enc.

801
865

July 14, 1891.

Edison General Electric Co., Eastern District,

Charles D. Shain Esq., District Manager,

Edison Building, Broad Street, City.

Dear Sir:-

Herewith our order No. 3 which please have forwarded as quickly as possible. In sending this order from Ogden, Mr. Edison makes the following remark which we quote.

" The old style has to be abandoned being a flat failure and an allowance should be made."

Will you please look into this and make us credit for same.

Yours truly,

W. B. Perry

Treasurer.

Order #3.

827

July 15, 1891.

Tooke Straker, Manager,

Port Oram, N. Y.

Dear Sir:-

Your favor of July 7th, to Mr. Thomas A. Edison, was sent to this office by Mr. Edison, with the following remarks:

"Yours of the 7th received. It would please us very much to have you try the ore. I expect shortly to get my brick apparatus going. I could then load your furnace with a porous ore that would reduce beautifully, increase your out-put, with less coal consumption, and give you fine Bessemer pig".

(Signed) Edison)"

Further remarks on this subject by the Co., would be superfluous.

Yours truly,

W S Perry

Treasurer.

No Enc.

773
~~881~~

July 15, 1891.

P. F. Gildea Esq.,

Bechtelsville, Pa.

Dear Sir:-

Your favor of the 13th is at hand.

I note what you say about selling the wood work of the Mill and about the watchman.

I have written to Mr. Edison, asking him if we shall discontinue the watchman and allow you to sell what part of the Mill you can, and will let you know when I get his answer.

I have received a letter this morning from an Attorney in Reading, stating that his client, Mr. Benfield had a claim against this Co., for $58.36. Do you know anything of such claim, and if you do not, can you find out there?

I have allowed Mr. Elliott, our lawyer in New Jersey, to attend to it, but would like to hear from you first.

Yours truly,

W. S. Parry

Treasurer.

Enc.

THOMAS A. EDISON
LABORATORY

729
854

July 16, 1891.

Dear Mr. Cutting,

Enclosed please find copy of a letter I have just received from Mr. Edison.

He may be a little sanguine, but when I was up there on Tuesday, Mr. Swartz, the new Superintendent, told me there was no doubt but that the Mill could and would crush 17 to 1800 tons per day when Mr. Edison got through with it.

The ore is now running better and richer than formerly so that when the Mill crushes 1800 tons, we ought to make 500 to 600 tons of Concentrate daily.

Yours very truly,

W. L. Rudy

R. L. Cutting Esq.,
United States Hotel,
Saratoga, New York.

July 11, 1891.

My dear Edison,

I was very glad to get your letter of the 14th, and note what you say the capacity of the Mill can be made.

It makes one feel very good, after the past month, to have such good news come.

I have sent a copy of the letter to our Cutting.

I enclose you copy of a letter I received this morning from the Bethlehem Iron Co., I send this to you as you can probably find out what the foreign substance in our Concentrate ~~[illegible]~~ is. It will never do to let the Bethlehem Co., have poor stuff when we can make good.

I asked Mr. Hutchinson to speak to you about your Mill at Bechtelsville. I have got Gibbs on the new packing and shipping the machinery according to your instructions. He writes asking after all the machinery is out, if there is any necessity of keeping the watchman, and also if he shall sell any part of the wood used in the Mill if he can find a purchaser. I have written him that I have asked you about it, and will let him know when I get your answer.

Yours very truly,

W. Berry

Treasurer.

Thomas A. Edison Esq.,

Ogden,

New Jersey.

July 17, 1891.

Thomas A. Edison Esq.,

Ogden, New Jersey.

My dear Edison,

Enclosed please find your requisition on us No. 32, and a copy of McIntosh, Seymour & Co's letter to us, which we received this morning, also confirmation of telegram to the Works.

In reply to your telegram as per enclosed confirmation, they say that McIntosh, Seymour assume that this order was for the 13 X 23 X 17 engine, but before sending the stuff, wish to know surely if that is right.

The orders for all requisitions from the Works have been sent out and we have received advices of shipment of a large number of them and have taken steps to hurry forward the balance.

We have also written to the Central R. R. Co., complaining of the time it takes to deliver freight to our Works. Am sorry there should have been any delay and trust the steps we

have taken, will prevent any in the future.

Yours very truly,

W. L. Perry

P. S.- Please return Requisition that we may be able to complete our file.

In response to your telegram asking for catalogues I send you by this mail all that could be obtained today others are to be mailed to us, will forward them as soon as received.

856
872

July 20th 1891.

Thomas A.Edison

care N . J . & P .C .Works

Nolans Point.

Dennis was discharged for refusing to obey the orders of engineer.

Under circumstances do you want him.

Samuel Insull.

Collect.

874
925

July 20, 1891.

Messrs. McIntosh, Seymour & Co.,

Auburn, New York.

Dear Sirs:-

In reply to yours of the 16th inst., we regret our omission, in giving the engine on order No. 13.

Please add thereto,

for 13 and 23 X 17 engine.

This is the one, you will see, you assumed we required the extra parts for.

Yours truly,

W. A. Perry Jr.

Treasurer.

PS. We understand that all orders for your Engines, or parts thereof, should go through Messrs Prince and Thomas of this City. We have notified them of our having sent orders direct to you, please bill to them, and notify us of shipment.

No Enc.

July 22nd, 1891.

J. H. Hutchinson, Esqr.,

Care of New Jersey & Pennsylvania Concentrating Works,

Nolan's Point, Lake Hopatcong, N.J.

Mr. Ogden is ordering goods for Ogden through your office. Please [illegible] to him that all your big purchases are made through the Purchasing Department of the General Company and that if orders are sent to Concentrating Works Office the General Company's organization will be availed of, as arranged by me and as explained to Edison.

Samuel Insull.

880
899

July 23, 1891.

W. S. Perry,

Care N. J. & P. C. Works.

Nolans Point, N. J.,

See my telegram to Hutchinson. You must arrange with Edison that all orders come to Concentrating Works office. Nobody at Avenue B. understands purchases as all their purchases are made through General Companys Purchasing Department. I told Edison that he would get quicker and better attention here.

Insull.

B. F. Ha
N. Wagstaff

EDISON GENERAL ELECTRIC CO.

OFFICE OF SECOND VICE-PRESIDENT.

PRIVATE LINE

CONFIRMATION OF MESSAGE.

886
9/5

NOTE—This confirmation should be checked with the original message immediately on receipt. It will be assumed to be correct unless advised to the contrary by telephone.

Name of Person Sending.	*Name of Person Receiving.*	*Time.*	*Date.*
Hammil.	Dingsted.	1.00	7/23/91. 189

From whom received, J. Hutchinson.

To whom sent, J. H. Wagstaff.

I have just remembered that Mr. Edison advises selling buildings at Bechtelsville. I do not know whether Mr. Perry knows this, but you had better leave a memo. on his desk to this effect.

JHW
4

~~73~~ 8

July 24, 1891.

H. K. Hartzell Esq.,

8th and Walnut Sts.,

Allentown, Pa.

Dear Sir:-

As our Mill is shut down for repairs and will probably remain so for some time to come, I do not wish you to offer any of our ore for sale as I doubt if we could fill any orders at present.

Yours truly,

W S Perry

Treasurer.

Do you know any one that would like to buy the wood work of our Mill at Becktelsville, or any part of it or our interest in the land.

W S Perry

No Enc.

836
967

July 24, 1891.

E. M. McIlvain Esq., Ass't to Vice-President,

Bethelehem Iron Company,

South Bethelehm, Pa.

Dear Sir:-

Your favor of July 15th was received and noted, and on such date I forwarded copy of it to Mr. Edison, and Mr. Edison has written me that the reason of the shipments of ore being poor was, that it was taken from the sides of our ore bin where the dust had settled. The windows had been left open and the rain had come in and caked up some of the dust.

That will not happen again and in future shipments will be same as formerly.

Yours truly,

W. C. Kerr

Treasurer.

July 30, 1891.

E. M. McIlvain Esq., Ass't to Vice-President,

Bethlehem Iron Company,

South Bethlehem, Pa.

Dear Sir:-

It would oblige us very much if you can send us a check for the June shipments of ore.

We have been under great expense this month remodelling our Mill, and I am, at present, very, very short of cash.

Trusting you can remit, I remain,

Yours truly,

W. L. Berry

Treasurer.

No Enc.

Letterbook, LM-205

This letterbook covers the period December 1891-April 1892. Most of the correspondence is by Thomas Butler, secretary of the company; William S. Perry, treasurer; John P. Walsh, sales agent for sand; and Edwin I. Olmsted, clerk. The letters deal mainly with stock transactions, equipment, supplies, and sand orders. Many of the documents relate to operating problems at the Ogden works, company finances, and ore marketing strategies. Some items pertain to the market price of General Electric securities. The spine is stamped "Letters" and is marked "C 3." The book contains 1001 numbered pages and an index. Less than 5 percent of the book has been filmed.

31/90

Dec. 23, 1891.

Arthur W. Howe Esq.,

807 Drexel Building,

Philadelphia, Pa.

Dear Sir:-

Your favor of Dec. 21st is at hand.

We are running our Mill now and I see no reason to doubt why you should not get your 60 or 80 tons of ore per day any time after the first of January.

We shipped a car last Friday to the Delaware Rilling Mills, also one to the Catasauqua Mfg. Co., and one to the Boonton Iron & Steel Company.

We have not got our screens in working order yet in our No. 2 Mill but we have got enough to satisfy me that we will concentrate somewhere from 200 to 250 tons per day in the beginning, and I think by January 10th, we will get out from 400 to 450 tons.

Yours truly,

Treasurer.

152

137

Mr. Edison

Dear Sir

Orange N.J.
June 4. 92

Mr. Edison is at Orange N.J. & will be for a few days under the circumstances would it be best to wait a few days until we can locate him at Ogden Junction Mr Perry left this P.M. but will return tomorrow P.M. to me & I could not find him then or Saturday and it is possible that Sam Insull may not be running Wednesday

Everything considered, I would suggest that you & Mr Insull appoint another day

What say you?

Yours Truly

F. P. Walker

[MISDATED. CORRECT DATE IS JANUARY 6, 1892]

118
184

Jan. , 1891.

Arthur W. Hunt, Esq.,

Of Hunt & Lathrop,

Philadelphia, Pa.

Dear Sir:

We have at the Boston We have received and find that we will be now running reasonably right along, and I would like to know if you want the shipments to commence to the Hunt branch house or, if so, we now ready at any time to commence shipments.

If you an order park day by telephone we ship another car of coal to [illegible]. Supplies to Lackawaxen and it will go forward to-day.

I notice not considering of product much more than enough to run, the Lackawaxen and Hunt branch co's, I think you had better use right now all we can to other parties unless they will pay us [illegible] as we are in another your friends in Danville, in one week, if any of the smaller buyers want our stuff enough that they are willing to pay us $1 per unit delivered, we will sell it to them.

We are open to receive bids from you from other parties, but might you had better hold to $1 per unit delivered, for the present, or any [illegible].

I would like to know if you can find out the financial standing of the firm of Jersey City or P. W. Lovering of Philadelphia, [illegible] have never heard of them.

Yours truly,

W. D. Berry

Treasurer.

Jany 6.92

Mr Conley Esq

Dear Sir, Letter from Mr H. Beddle Supt of Outline which no doubt you have seen is before me — this was bound to come sooner or later and I do informed me Mr McDonald repeatedly

I spent 3 Months educating my self on the Land question and succeeded in learning all that is necessary to know on the subject.

I spent 3 Months Kicking & raising — trying to get land when and as customers offered I at Once I failed every time.

I am discouraged and want to quit, and if it had not been for Mr McDonald's kind treatment I certainly would have quit before.

Of course I cannot and do not blame any one, but I do want to know if this delay will cost me anything

Yours in haste I am satisfied on that point but I don't want to starve while waiting. When will you be ready?

Kindly answer & oblige

Yours Truly
[illegible]

Feb. 6th, 1892.

Arthur W. Howe Esq.,

609 Drexel Building,

Philadelphia, Pa.

Dear Sir:-

Your two favors of Feb. 3rd are at hand.

I have notified our Works at Ogden not to ship to the Delaware Rolling Mills any ore for the next two weeks and after that, unless otherwise advised, to ship one car per week.

I telegraphed you this morning as follows:

" Four fifty our best price. Other terms in your letter agreable."

My reason for adhering to $4.50 is this: It will not take over 25 ¢ per ton for me to have the ore shoveled to one end of our storehouse, and Mr. Fritz of the Bethlehem Iron Co. has agreed to take it at 7-3/10 ¢ per unit whenever we can ship 2/3 of our regular ore with 1/3 of this. Consequently any reduction below 25 ¢ would be a loss to us, but I still confirm the order to you to sell 1500 tons of 65% iron and .052 phosphorus at $4.50 F.O.B. Ogden, provided it can be delivered very shortly.

I should much prefer to deliver it quicker than the North Branch people have offered, but will agree to their terms of 40 tons per day, commencing some time next week.

I hope you can sell the ore, not only for my sake but for yours, as I suppose the commission would be agreable.

We expect to start up both mills next Wednesday and I trust our ore will be what we have contracted to deliver.

Yours truly,

Wolcott

Treasurer.

Feb. 12, 1892.

I. D. Barton Esq., Gen. Supt.,

New York & New England Railroad Co.,

180 Sumner St., Boston, Mass.

Dear Sir:-

Replying to your favor of the 10th inst., will say that in separating the magnetic ore according to the Edison system, we are obliged to grind, roast and screen the ore to a mesh suitable for "Engine Sand", and the refuse or bi-product, sand, is discharged from the mill, and shoots into the cars of the N. J. C. R. R. This bi-product, sample of which I enclose, is and has been used by

W. Buchanan, Supt. Motive Power & Rolling Stock
N. Y. C. & H. R. R. Co.

H. H. Vreeland, Gen. Supt.
N. Y. & N. R. R.

Col. F. K. Hain, Gen. Mgr.
Manhattan R. R. Co.

W. H. Peddle, Supt.,
N. J. C. R. R.

A. Reasoner, Supt.,
D. L. & W. R. R.

and other leading roads. All the above parties report that it is the Best, the cheapest and the most desirable Engine Sand they have ever used. It is no experiment. Your Company cannot load, unload, roast and fit sand for engine box as cheap as we can handle this article.

Hoping you will consider the matter at your convenience, I remain,

Yours very truly,

Feb. 12th, 1892.

Samuel Insull Esq.,

44 Broad St., City.

Dear Sir:-

Referring to the daily reports of the running of the mills at Ogden, I beg to say that in my opinion, many of the stoppages which are reported daily, are needless and should not be allowed to occur. To illustrate; I enclose herewith a report for the 10th inst. on which you will notice the first stop was made on account of the sheel becoming loose on one of the rolls; the second was because some bolts came out of a sheave; the third stop was made on account of a belt running off; the fourth stop was made by same belt coming off again; the sixth stop was made because an elevator sprocket became loose on the shaft.

In my opinion, not more than one, at least, of the 6 stops on the report enclosed herewith should have been necessary

Knowing as I very well do, that any stoppage in a factory employing a large number of men is always a very expensive affair,

I call your attention to this matter, thinking that perhaps the frequency of these stops and the apparent needlessness of the same may have escaped your notice.

I will thank you to kindly return this report to me when you have finished with it.

Yours truly,

Henry C. Ware

HK

Feb 15/92.

Thos A. Edison Esq
Orange, New Jersey

Dear Sir:

I beg to send you
herewith a copy of the last analysis
of your ore made by Mr. Heath, Powell
& Blair & Hodge.

He is quite encouraging.

Yours very truly,

D. C. Davis Esq

G. H.

Pat to Litt Pg 50

ANALYSIS of Sample of Ore marked "Sample G" Received by Messrs. Booth, Garrett & Blair about the 10th inst.

Metallic Iron.....67.473%

Phosphorus,..... 0.037

525

577

NEW JERSEY & PENNSYLVANIA CONCENTRATING WORKS.

CONFIRMATION OF MESSAGE.

NOTE.—THIS CONFIRMATION SHOULD BE CHECKED WITH THE ORIGINAL MESSAGE IMMEDIATELY ON RECEIPT. IT WILL BE ASSUMED TO BE CORRECT, UNLESS ADVISED TO THE CONTRARY BY TELEPHONE.

Name of Person Sending.	Name of Person Receiving.	Time.	Date.
Beck	Olmsted	1.25	Feby 20 1892

From whom Received: Mr Batchelor

To whom Sent: Mayor Eaton

I cannot testify in the Railroad case on Tuesday

587
599

Feb. 29, 1892.

Arthur W. Howe Esq.,

607 Drexel Building,

Philadelphia, Pa.

Dear Sir:-

I have your favor of Feb. 27th.

I think it would be a good plan for you to take up the matter that Mr. Edison is asking about, and as you do so, kindly let me know who you have sent to and about what you say.

Mr. Edison makes it a strong point that these puddlers get our ore already ground. As he mention-s Knoxville, Tenn. and Norfolk, Va., I think it would be well for you to write to some of the people there soon. You can go ahead and sell ore until I tell you to hold up. We are making now 150 to 200 tons per day, and as our two contracts only call for 140 tons, we have 50 or 60 tons per day over.

I have ordered a Directory of the Iron & Steel industries of this country, and when I get it, will look over the list and check off with you those you have written to.

I should like to have these puddlers written to as soon as you can conveniently do so, as Mr. Edison is a great hand for hurrying things.

Yours truly,

Treasurer.

No Enc.

582

March 2nd, 1892.

Arthur W. Howe Esq.,

607 Drexel Building,

Philadelphia, Pa.

Dear Sir:-

I received a letter from F. P. Howe, General Manager of the North Branch Steel Company, asking me for letters to the people that used our ore.

With the exception of the Crane Iron Co. and one or two other Companies to whom Dr. Hartzell sold some small lots last Spring, you have sold all the ore we produced outside of the Bethlehem Company, and if the North Branch Steel Co. would like to see those people in relation to our ore, I think it would be well for you to put them in the way of doing so.

Do not forget to let me know with regard to writing the puddling furnaces.

I am just in receipt of your favors of March 1st covering F. P. Howe's note for four months, which is satisfactory, and we have receipted the bills and forwarded them to Mr. Barber at

at Phillipsburg, and now enclose Mr. F. P. Howe's letter to you on the subject.

I note what you say with regard to rolling mills and agree with you except that a great many rolling mills, particularly at Knoxville and eastern Pa. are using what they call wet fix, and our ground ore is very fine for that.

I also note that you ask for freight rate to Troy, N. Y. which I will obtain for you as soon as possible.

Yours truly,

Treasurer.

Enc. letter.

601

March 3rd, 1892.

F. P. Howe Esq., V. P. & G. M.

North Branch Steel Co., Danville, Pa.

Dear Sir:-

Replying to your letter of Feb. 29th, we beg to say that the only party to whom we have sold our ore in very large quantities is the Bethlehem Iron Company. We have sold ore in small quantities to the Crane Iron Co., Catasauqua, Pa. and to the Catasauqua Mfg. Co., Catasauqua, Pa. but we presume it would be hardly worth your while to see these people inasmuch as the quantity we have sold them thus far has been very small. As we are not acquainted with them, we could hardly give letters of introduction to them. We think, however, that your Manager would visit the Bethlehem Iron Co's Works, he will probably get whatever information he might desire with relation to our ore.

Yours truly.

Treasurer.

No Enc.

THE NORTH AMERICAN PHONOGRAPH CO. 610

CONFIRMATION OF MESSAGE.

This confirmation should be checked with the original message immediately on receipt. It will be assumed to be correct, unless advised to the contrary by telephone.

Person Sending.	Name of Person Receiving.	Time.	Date.
Ed	Smith	4:30	March 2nd 92 189

To whom received: Mr. Butler,

From whom sent: Mr. Edison, Ogden Mine,

5581

624

There is very little doing in the stock market today. Edison General quoted nominally 98,99. Are you liable to be in New York this week. I ask the question, because Messrs. Eaton & Lewis, have a document to which they wish your signature, in connection with the recent increase of capital of the New Jersey & Pennsylvania Concentrating Works. If you are not coming to New York then it will be necessary for me or someone else to come to Ogden to get your signature, as the document in question has to be filed, not later than the 6th inst.

T.

/A

NEW JERSEY & PENNSYLVANIA CONCENTRATING WORKS.

CONFIRMATION OF MESSAGE.

NOTE.—THIS CONFIRMATION SHOULD BE CHECKED WITH THE ORIGINAL MESSAGE IMMEDIATELY ON RECEIPT. IT WILL BE ASSUMED TO BE CORRECT, UNLESS ADVISED TO THE CONTRARY BY TELEPHONE.

Name of Person Sending.	*Name of Person Receiving.*	*Time.*	*Date.*	
Smith.	Peckham.	4.50	3/3/92	*Ady*

From whom Received: Mr. T. A. Edison.

To whom Sent: Mr. Thomas Butler,

I am not coming to New York this week.

Send document by mail. I will try and send it back.

TB.

THE NORTH AMERICAN PHONOGRAPH CO.

CONFIRMATION OF MESSAGE.

NOTE.—This confirmation should be checked with the original message immediately on receipt. It will be assumed to be correct, unless advised to the contrary by telephone.

Name of Person Sending.	Name of Person Receiving.	Time.	Date.
Lowelberg	Smith	4:40	7/1/93 189

From whom received: Thomas Butler, Esq.,

To whom sent: Thomas A. Edison, Esq., Ogden Mine.

The market today has been slow. A few hundred of Edison General were traded in, about 700, and finally left off at 98 1/2. I shall be at the mine in the morning to attest the document referred to in my message yesterday, and with an important message from Mr. Insull.

98 —

March 4th, 1892.

Henry Wellington Esq.,

468 Cherry St., N. Y.

Dear Sir:-

Your favor of March 2nd to our Ogden Works was referred to me this morning to answer.

We are making at present iron concentrate that is 50 mesh fine. We guarantee it to contain 65 units of metallic iron and from .035 to .045 phosphorus.

With regard to price, the lower in Phosphorus we deliver it, the higher the price.

I would be pleased to call on you or to see you at this office in relation to selling you ore.

I think we would have no trouble in delivering you 100 tons per day if you can use it.

Trusting to hear from you on the subject, I remain,

Yours truly,

Treasurer.

No Enc.

627
667

March 7th, 1892.

Arthur W. Howe Esq.,

607 Drexel Building,

Philadelphia, Pa.

Dear Sir:-

Kindly let me know at the office by Wednesday morning whether I can see you at your office Wednesday about two P. M. We are accumulating iron pretty rapidly at our Mill and I want to see what prospects there are for your selling it.

Yours truly,

Treasurer.

No Enc.

H. Y. Office.

T. H. Smith.

3/10/92.

I notice that you have given us on your report for the 8th the number of tons of ore put into the No. 2 stack-house, for which I am obliged.

You have, however, omitted to give us the feed per hour as I instructed you on Tuesday. Please do not omit this in the future.

Please advise what kind of plank (the) is to be ordered on req. 1195.

W D Parry

March 11th, 1892.

Arthur W. Howe Esq.,

607 Drexel Building,

Philadelphia, Pa.

Dear Sir:-

Your favors of March 10th are at hand.

You might say to Messrs. Phillips, Nimick & Co. of Pittsburgh that on March 4th Messrs. Booth, Garrett & Blair of Philadelphia sent us an analysis of our Ogden ore which contained metallic iron 67.366% and phosphorus .035%.

We have never had a full analysis made, but I have taken your suggestion in consideration and will probably be able to send you a full analysis before long.

The rate of freight that you mention to ship to Pittsburgh, $3.00 per gross ton, is the rate that we have from the N. J. C. R. R. Co. Whether that can be reduced or not, I will find out if there is any likelihood of orders.

You mention in your other letters that you hand us the list of the Rolling Mill Companies to whom you have recently written, but no such list was enclosed in your letter.

I note what you say in regard to most of them not being in a position to try our ore but hope they will be able to do so later.

With regards sending me the price and analysis of foreign ores, I would say that if you will send me the price of some 60% foreign ore, phosphorus medium, and also the price of a high grade foreign ore, low in phosphorus, I think that would be sufficient for the present.

I have not yet secured the freight rate to Troy but we are in communication with the Railroad Co. this morning and trust to be able to send it to you by tomorrow at latest.

Yours truly,

Treasurer.

N. Y. Office.

March 12th, 1892.

T. H. Smith,

Referring to your memo. of the 11th in which you state that you cannot furnish the feed of the stuff in the No. 1 stock-house, I would say that you misunderstood me in this respect. I do not want the feed from the No. 1 stock-house but I want the feed from the No. 2 separators. Please see that this is put on the reports in the future.

W. T. Henry

PHONOGRAPH DICTATION.

March 17, 1892.

Dear Batch,

I have seen the New York Belting & Packing Company and they say, "ship the belt back to us; we can sell it to some sugar refinery at a better price than you could afford to pay us for cutting it up". I intimated that we would be glad to take it at a reduction from the first price, for cutting up. They said they would make no reduction, consequently there was nothing to say but that we would ship it back to them. If you will see to it that it is shipped back to the N. Y. Belting & Packing Company, I shall be very much obliged,

Yours truly,

Charles Batchelor Esq.,

Ogden, New Jersey.

192

April 4th, 1892.

Thomas A. Edison Esq.,

Orange, New Jersey.

Dear Sir:-

Enclosed please find a copy of the analyses of iron ore for iron and phosphorus, received this day from the Pittsburgh Testing Laboratory.

Yours truly,

Treasurer.

Enc. analyses.

April 4th, 1892.

The following is a copy of analyses of iron ore for iron and phosphorus, received this date from the Pittsburgh Testing Laboratory, 98 Fifth Ave., Pittsburgh, Pa.

	Iron.	Phosphorus.
No. 6941,	68.87%	.024%
No.6940,	69.18%	
		.025%
No. 6939,	69.64%	.017%
No. 6938,	69.13%	.022%
No. 9637,	69.84%	.026%
No. 9636,	69.06%	.024%
No. 9635,	69.18%	.025%
No. 9634,	69.11%	.032%

Samples all dried at 212 degrees F.

Letterbook, LM-206

This letterbook covers the period September-November 1892. Most of the correspondence is by William S. Perry, treasurer of the company; John P. Walsh, sales agent for sand; and Edwin I. Olmsted, clerk. The letters deal mainly with stock transactions, personnel matters, company financial obligations, equipment, supplies, and sand orders. Many of the documents are concerned with production at the Ogden works and the purchase of new bricking equipment. One letter pertains to the wages paid to Thomas A. Edison, Jr. Another relates to changing the name of the location of the mill from Ogden to Edison. The spine is stamped "Letters" and is marked "C 5." The book contains 693 numbered pages and an index. Less than 5 percent of the book has been filmed.

Sept. 6, 1892.

W. S. Mallory Esq.,

Edison, New Jersey.

Dear Sir:-

[illegible] of Sept. 5th is at hand, asking for [illegible] of concentrate [illegible] we commenced up to the [illegible] and I now take pleasure in enclosing said report

I wired the Works this morning that we had received a cable from Mr. Batchelor asking if the bricking plant was still at work and to please answer. As Mr. Batchelor has cabled from Holland asking for that information, I should like to cable him [illegible] Kindly wire me tomorrow even if the bricker [illegible] chances are.

[illegible] tell Mr. Conley that I send Shaw, the fireman, [illegible] by the 4.10 Susquehanna & Western train, and that [illegible] which is to be deducted from his wages.

Yours very truly,

W. O. Berry

[illegible]

29

SHIPMENTS OF EDISON ORE CONCENTRATED FROM OGDEN, N.J.

FROM THE COMMENCEMENT OF THE MILL'S WORKING TO JULY 31ST, 1892.

	TONS.		CWT.
[illegible]	[illegible]	-	15
[illegible]	4505	-	8
[illegible]	2844	-	[illegible]
[illegible]	2126	-	15
[illegible]	55	-	16
[illegible]			
[illegible]	111	-	3
[illegible]	[illegible]	-	8
[illegible]	[illegible]		13
[illegible]	[illegible]		
[illegible]			
[illegible]			
[illegible]			

28/60

Sept. 8, 1892.

W. S. Whitney Esq.

Elizabeth, New Jersey.

Dear Sir:

Your letter of the 7th is at hand.

I recalled Mr. Batchelor that the new cutter would be running next week and then wrote him a long letter giving the reason why it was not running, that you were waiting for the tied. I also gave him a general outline of what has been done during the past month. He is in a small town in Holland and I got a sort of an idea from his cable that it will be some time before he comes back. I think he will not leave his family in Buffalo while the cholera is on.

We succeeded in selling your ticket to Chicago for $12.00; that is low but it was the very best we could do after [illegible] to place the ticket [illegible]. I will bring the money out with me on Saturday.

Some bill-to-bills are now commencing to come in; you will get several of them tomorrow from the mail tonight.

59/74

2

I think in a day or two this will come in pecuniarily

[illegible] family.

W. J. Perry

[illegible] Treasurer.

180

W. S. Perry, Treasurer. 9/28/92/ 241

O. J. Conley, Superintendent,

My dear Conley,

Enclosed please find a letter from F. C. O'Reilly in relation to the sand we are now sending him. As Mr. O'Reilly is our best customer for sand at present, I send this to you that you may realize that we must make every exertion to get some of the dust out of the sand. Can you not find some way to satisfy him so that we can fill the balance of his order.

You did not write me, giving me any reasons for the delay in unloading the coal cars in August, consequently I am now about to write to Mr. Morse that we had a bad accident at our Works during the month and that a la ge part of the time we were building a pit to hold the coal and had no place to unload it.

Kindly have the remaining five cars to Brady hurried forward. Two cars per day were to be shipped to him and the order should have been filled before now.

Also ask Smith to send the car initials for the shipments on the 27th.

I am going now to attend a funeral and will probably not be back to-day, consequently will not be down to the office before tomorrow morning.

Yours truly,

W. S. Perry

W. S. Perry, Treasurer.

O. J. Conley, Sup't.

5/30/97

423

My dear Conley,

I see that there was no sand shipped to F. C. O'Reilly between the 22nd and the 28th and O'Reilly has telegraphed me that he has been obliged to stop work on account of his having no sand. What is the trouble?

I have just received a telegram from R. L. Cutting asking me how much ore we were shipping and how much we were bricking. Kindly telephone me tomorrow so that I can answer him in some way. I telegraphed him that we were making from 150 to 200 tons per day and bricking about one half of it.

W. S. Perry

261

Oct. 5, 1892.

Arthur W. Howe Esq.,

Philadelphia, Pa.

Dear Sir:-

Your favor of Oct. 3rd is at hand.

I note what you say regarding the Reading Iron Company. I wish you could make a sale to them of two or three thousand tons of Concentrate but I question whether our price will suit them, but we have a lot of it now on hand and should be glad to get rid of it.

I was up at Ogden yesterday and in one way am satisfied with the manner in which things are going on up there but in another way rather disgusted. The satisfactory part is, that we are turning out 20 tons of Concentrate per hour without any trouble, that both mills are working smoothly, that with our automatic mixer, our bricker can turn out 20 tons of bricked ore per hour. The unsatisfactory part is, that the furnace to dry the ore is not worth anything and we have got to build a new one w ich will probably take two weeks, and I question if we will have any bricks, that is, in any quantity, before that time, and possibly not before the 1st of November, judging from the way we have been delayed in

other things. In all other respects, however, we appear to have accomplished what we set out to do. I will let you know just as soon as we are turning out bricks in any quantity.

Yours very truly,

W. Lerry

Treasurer.

268
295

172
300

Oct. 7, 1892.

John S. Wood Esq.,

18 Liberty St., City.

Dear Sir:-

We beg to advise you that all the men who were injured at the accident at our Works on August 12th last were on our pay-roll at the time and were paid by us, the amount of their wages being deducted from the amount due Ward on his contract.

The above is in reply to the question raised by Coudert Bros. in their letter to the Guarantee & Accident Lloyds, dated Oct. 4th, a copy of which was received from you this morning attached to Cleveland S. Fisher's letter addressed to you under date of Oct. 5th.

Yours truly,

W. O. Perry

Treasurer.

769
37 X

Oct. 7, 1892.

Arthur W. Howe Esq.,

Philadelphia, Pa.

Dear Sir:-

Your favor of the 6th is at hand.

I should like to have you submit to me any offer you may have from the Reading people as regards concentrates but I do not feel like lowering the price of concentrates from 6-7/8 ¢ per unit f.o.b. Ogden, until we know certainly whether the bricks are to be a success or not and exactly what they will cost us as we shall make the price of the Concentrates equivalent to the price we ask for bricked ore, viz: 6-7/8 ¢ per unit, f.o.b., the Concentrates being 6-7/8 ¢ per unit less the cost of making it into bricks.

Yours truly,

W. C. Perry

Treasurer.

376
31

N. Y. Office. 10/13/92/

Ogden Works.

On Mrs. M. A. Smith's board bill appears the bill for T. A. Edison, Jr. $21.80. My understanding with you was that we were to deduct the $14.00 and some cents which would be due Tom for wages, from his board bill, and the balance of the bill was to be paid from petty cash. I see from this bill that the whole of it has been charged. What has become of the $14.00?

We are in receipt of a letter from the Weston Electrical Instrument Co. who write as follows: "We have been awaiting the ammeter that you say was forwarded to us 9/28/92 as per your order 2539. Unless we have the number of the instrument, we cannot return any meter to you, so please help us out, at the same time helping yourselves."

W. L. Perry

431
433

N. Y. Office.

Ogden Works.

Oct. 26, 1892.

I received from you a list of the ties delivered to the C. R. R. by J. M. Hunt on Sept. 12th, check for which Mr. Hunt is to send to us as soon as he receives it and we will credit his account with it. The last account that you made up for us from Hunt's books was made up to June 30th. S ince this, besides the ties that he has shipped, he has shipped some posts by the Sus. & Weatern road, I believe, and some cord wood by the C. R. R. Kindly make up Mr. Hunts account from June 30th to date and send here so that when we received the C. R. R. Co's check we will be able to know what balance to return to him .

We also received from you to-day some letters from A. A. Scott of the C. R. R. dated June 13th, giving a list of ties taken up in June, also some papers pinned to the letters with some of your figuring on them. As we don't know what they mean, we think you must have sent them down by mistake. Kindly let us know if you want them returned.

In sending down notices of shipments to the C. R. R., please state besides the car numbers, the destination, as your shipping report for the 25th simply says, C. R. of W. J., car no's so and so

W. C. Perry

498

Nov. 2, 1892.

Nauright, Weighmaster,

German Valley, N. J.

My dear Boy,

Every one is complaining of short weight on sand. This is particularly the case where Central's leaky gons are shipped But even the box cars are short. The R. R. People have settled the shortage claims so far but I cannot see why you should have short weights. How do you regulate your tare? There must be something wrong; what is it?

Yours truly,

Agent.

578
620

Nov. 14, 1892.

Arthur W. Howe Esq.,

Drexel Building, Philadelphia, Pa.

Dear Sir:-

Your favor of the 12th is at hand.

As I have just written Mr. Price, Mr. Edison contemplates making some radical changes up at our Mill, and while making them, we have decided that it will be cheaper for us to shut down the Mill until all the improvements are made, consequently, I think that for the present you had better go slow on working up any sand business. Although we will try to fill orders, it will have to be done by shoveling and carting which is rather expensive but I think for the present you had better not send in an order for a sample car of screened sand as we might disappoint the party and I should greatly prefer that the first sand we send there should be entirely satisfactory. We have about 8000 tons of Concentrate and during the time we are shut down, we intend to keep up shipments to Bethlehem and can fill any small orders you send us

Yours truly,

W. Lee

Treasurer.

576
6-16

Nov. 14, 1892.

The Acme Coal Company,

J. E. Price Jr. Esq., Treasurer,

Philadelphia, Pa.

Dear Sir:-

Your favors of Nov. 12th are at hand.

I now beg to confirm my telegram of the 12th to suspend shipments of coal until further orders. I am very much afraid that we will not give orders to resume shipments for a couple of months. Mr. Edison contemplates making some radical changes up at the Mill and while we are making them, we have decided that it would save money to shut down the mill. They claim that the changes can be made in six weeks but I am satisfied that it will take over two months.

Yours truly,

W. L. Berry

Treasurer.

5.6.

BATCHELOR.

15 VIA LUDOVISI,

ROME.

EDISON MAKING GREAT CHANGE AT OGDEN. YOU ARE WANTED BADLY.

PERRY.

608

NEW JERSEY & PENNSYLVANIA CONCENTRATING WORKS.

CONFIRMATION OF MESSAGE.

NOTE.—THIS CONFIRMATION SHOULD BE CHECKED WITH THE ORIGINAL MESSAGE IMMEDIATELY ON RECEIPT. IT WILL BE ASSUMED TO BE CORRECT, UNLESS ADVISED TO THE CONTRARY BY TELEPHONE.

Name of Person Sending.	Name of Person Receiving.	Time.	Date.
Mac	Mr. Haines	10.50 AM	Nov 15th 1892

From whom Received: N.J. & Penn. Concentrating Works.

To whom Sent: N.Y. Phonograph Co, 25 & 5th Ave. City

As we have no further use for the phonograph which we are now renting of you we would ask you to kindly remove it upon the expiration of the lease — Feby 15/93.

587

Nov. 16, 1892.

Arthur W. Howe Esq.,

607 Drexel Building, Phila. Pa.

Dear Sir:-

Your favor of the 15th is at hand.

I did not intend to put you into any awkward position as regards sand. Any orders that you have booked or can book we will take, as we are going to have a gang of men up at the Works to load and shovel the sand into the cars, but I wanted to caution you against getting any new customers for the present as loading the cars by shoveling and carting is a little expensive and we shall probably not make more than enough to clear our expenses on the sand while the Mill is shut down. If you can escape sending the sample car of screened sand referred to in yours of the 12th, I should like you to do so, as I am satisfied that when the Mill starts up again we shall be able to give a much better article than we can at present.

Yours truly,

W. L. Berry

Treasurer.

449

Nov. 17, 1892.

The Michigan Lubricator Co.,

Detroit, Mich.

Dear Sirs:-

The Central R. R. Co. of N. J. made the change in the name of our station, Formerly Ogden, to Edison about three months ago. I think that goods shipped to either of those points will reach us all right.

Yours truly,

W. L. Perry

Treasurer.

Letterbook, LM-207

This letterbook covers the period November 1892-April 1893. Most of the correspondence is by Thomas Butler, secretary of the company; William S. Perry, treasurer; John P. Walsh, sales agent for sand; and Edwin I. Olmsted, clerk. The letters deal mainly with personnel matters, company financial obligations, stock transactions, equipment, supplies, and sand orders. Some of the letters pertain to Edison's experiments at the Ogden works, fire precautions at the mill, and the ore milling processes of other companies. There are also minutes of a directors' meeting. The spine is stamped "Letters" and is marked "C." The book contains 699 numbered pages and an index. Less than 5 percent of the book has been filmed.

7/37

Nov. 29, 1892.

Arthur W. Howe Esq.,

Philadelphia, Pa.

Dear Sir:-

I have just received the following telephone message from Mr. Edison:

" Tell Mr. Perry for him to get from Howe of Philadelphia full particulars of the Seguay Iron Company of Cuba; what the first shipments of ore were sold for and what was the analysis, also find out what is the lowest price of freight by vessel charter to and from Santiago de Cuba within the last two years.."

Try to get as much of this information as you possibly can and in writing the letter about it to me, write it so that I can send it to Mr. Edison direct. I cannot advise you where to go to get this information but you may possibly be in a position to know this. I trust you are.

Yours very truly,

W. L. Perry

Treasurer.

MEMORANDUM FROM MR. PERRY TO MR. BUTLER.

Nov 20 16 1916

Your memorandum of even date is at hand.

I am not only under the impression but am positive that I gave you a memorandum of the minutes of the meeting of the N. J. & Pa. Concentrating Works increasing the capital stock of the Company. If you have lost said minutes, if you will come in here, I will give you another memorandum.

I send this memorandum to call your attention to the fact that you had better get the said minutes from me as early as possible.

Mr. Ware informed me yesterday that you wished the one share of stock that Mr. Marie' did not take on his assessment due November 14th last. I was not aware that you had had any understanding with Mr. Edison as regards taking such stock; in fact, within the past two weeks, Mr. Edison told me that all stock not taken by the other stockholders, he wanted, but as you wish it, and as you certainly would be entitled to it on your present holdings, if you will kindly send me a check for $100., I will have the certificate made out in your name.

W.H.

53
300

Dec. 2nd 1892.

Arthur W. Howe Esq.,

607 Drexel Building, Philn. Pa.

Dear Sir;-

I have just received the following telephone message from Mr. Edison.

"Cargo of Sigua Cuban Ore by English steamer Torgoun landed in Philadelphia Nov. 17th 2400 tons. Have Howe ascertain what freight was paid and what price per unit it was sold for when sold. Important.

(Signed) Edison."

I think the chances are that your favor which I take up to Mr. Edison tomorrow relates to this ore and will answer the questions, but as you did not give the name of the steamer or the date the different cargoes were landed, it may be a different one so I write this to you. If your first letter answered it, kindly let me hear from you to that effect.

Yours very truly,

W. L. Perry

Treasurer.

88
74

XXXXXXXXXXXXXXXXX

MATCHELOR,
15 VIA LUDOVISI,
ROME.

PERSON DOES NOT WANT COMPANIES BROKER.

PERRY.

92
732

Dec. 12, 1892.

J. E. Price Jr. Esq., Treasurer,

Acme Coal Company,

Philadelphia, Pa.

Dear Sir:-

I beg to confirm my telegram to you from Edison on the 10th inst., to ship two cars Bituminous coal immediately. I found when I got up at the Works that although we were shut down, we had to have some coal on hand in order to make the experiments which Mr. Edison is carrying on. I think those two cars will be sufficient to last us until we start up again which I hope will be early in the Spring.

Yours truly,

W. L. Berry

Treasurer.

F O Spencer A Boardman ×
F Sherman G W Campbell
H W Seely
C B Carman

[illegible]

[illegible]

[illegible]

[illegible]

The Annual Meeting of the Stockholders of this Company will be held at the office of the Company, at the Laboratory of Thomas A. Edison, Orange, New Jersey, on Wednesday the 11th day of [illegible], [illegible] o'clock P.M., for the election of five Directors to serve for the ensuing year, and the transaction of such other business as may properly come before the meeting.

Yours very truly,

Thomas Butler.
Secretary.

Notices for the above meeting

T A Edison,	Mina Edison	J Miller
R L Cutting	J B Lee ×	A V Stephens
W S Pierce ×	J Replogle	O Marx
A V Tate ×	W Cutting	R S Dana
C Batchelor ×	T J Rogers	C H Howard
J Hutchinson	Mary Miller	T Butler ×
		R Butler Jr.

237

Jan. 3, 1893.

Mr. A. W. Nibolius,

Hackettstown, N. J.

Dear Sir:-

Your favor of Dec. 29th is at hand.

The best day to catch Mr. Edison at Orange is Monday. He usually spends the balance of the week at Edison, Sussex County, New Jersey.

Yours truly,

W. S. Perry

Treasurer.

274/287

Jan. 9, 1893.

Thomas A. Edison Esq.,

Orange, New Jersey.

Dear Sir:-

According to your instructions I ordered from Mr. John Kruesi at Schenectady two 40 light arc light machines at $350.00 each and 60 lamps at $9.50 each, and this morning Mr. Kruesi returned the order with the letter stating that he could not sell us the goods at that price, that he had made a special arrangement to sell them to you personally and asked as a favor to have you order them personally. Do you wish this office to send you an order for same?

Yours very truly,

W. Sells

Treasurer.

299
341

Jan. 18, 1893.

Thomas A. Edison Esq.,

Orange, New Jersey.

My dear Sir:-

I have just received the following telephone message from Mr. Gilmore at Schenectady.

" Mr. Edison has not as yet sent his order for the arc light machines and lamps. I wish you would stir it up."

On January 9th I wrote you at Edison that I had received a letter from Mr. Krusi in which he stated that he could not sell us those machines and lamps at the prices mentioned to us as that price was for you personally, but if you ordered them personally, you could dispose of them to us at any time.. Thinking you may not have received the letter, I write again at Orange to call your attention to the fact that if you wish to purchase, you will have to order personally, and from their anxiety, I should say that they would like to have it done immediately.

Yours truly,

W. S. Berry

Treasurer.

W. S. PERRY,
PRESIDENT.

SECRETARY.

332
356

Jan. 23, 1893.

John H. Wood Esq.,

20 Liberty St., City.

Dear Sir:-

In answer to the letter you have just shown me from the Lancashire Fire Insurance Co. of Manchester, England, dated August 29th, 1892, I beg to say that the first point that they wish done, to provide a duplex steam fire pump, we have not done as yet and neither have we put in any extra hydrants which they call for but we intend to put them in the early part of spring before we start up again. The second requirement, that we have self-closing metal cans in the engine room, is complied with. The third requirement that the watchman be made to use a time detector and a record of same dated and filed, has been attended to. Fourth, to organize and regularly drill once a month during the warmer weather a private fire brigade, we have done that. We have got a new fire hose which is kept in order and it is easy of access and also a hose-cart. We have also got barrels filled with water on every floor and in all parts of our Mill, with fire buckets hung outside each of the barrels.

353
367

We also keep while we are shut down steam in one of the boilers in order to be able to get a good head of water at any moment.

Yours truly,

W. L. Perry

Treasurer.

324/361

Jan. 24, 1893.

O. J. Conley Esq.,

I enclose you copy of a letter which Mr. Wood has just recsived from the Lancashire Fire Insurance Co.

I have answered him that we have done all that they ask with the exception of the first requirement, and with regards that what can we say? In the early spring we will have to put in those hydrants. If we do not, it is going to cost us $2000. additional premiums. I wish you would write me officially that all the requirements have been complied with, with the exception of the 1st and that that will be done before we start up again in the spring. I also wrote them that steam was kept up in one or two of the boilers so that we could always get a head of water from the pumps. If that is not so, you had better not say anything about it.

W. H. Berry

3100
362

Jan. 24, 1893.

O. J. Conley Esq.,

The following is a copy of a letter which Mr. J. H. Wood received from the Lancashire Fire Insurance Co.

"In relation to insurance of the N. J. & Pa. Concentrating Works situated in Ogden, Sussex County, N. J., we have to recommend the following improvements:

ESSENTIAL.

First, provide a duplex steam fire pump having at least a capacity of 500 gallons per minute which should be located in a detached fire proof building and arranged to be supplied by a system of at least 5 outside and 4 inside hydrants; also a supply of fire hose for same.

Second, provide self-closing metal cans in engine room.

Third, watchman should be made to use time detector and a record of same should be dated and filed.

Fourth, Organize and regularly drill, at least, once a month during the warm weather a private fire brigade.

Will you please communicate the above to the insured and advise us what, if any action, will be taken.

Yours truly,

SECRETARY.

W. S. PERRY,
SUPERINTENDENT.

367
443

Jan. 30, 1893.

Col. J. H. Wood,

20 Liberty St., City.

Dear Sir:-

I am just in receipt of a letter from our Superintendent at Edison, Mr. O. J. Conley, confirming what I wrote you in regard to what we had done towards complying with the conditions imposed by the Insurance Company. If you wouldlike to see the letter, will you kindly call at this office as we shall keep it on file.

I must beg of you to hurry up for me the list of our insurance that we are now carrying as at present I have not the remotest idea what the amount of insurance is and how it is distributed, and you must see that it puts me in a very awkward position.

Yours very truly,

W. S. Perry

Secretary.

W. S. PERRY,
TREASURER AND MANAGER.

SECRETARY.

385

Jan. 30, 1893.

Colonel D. C. Houston,

Army Building, N. Y. City.

Dear Sir:-

Your favor of Jan. 28th is at hand.

Mr. Thomas A. Edison, the President of our Company was in this morning and I showed him your letter and he said he would make up and send you a number of bottles of our sand showing the different sizes. We have never issued any circulars about the sand. It is a bi-product after concentrating the iron which is taken from rock which we blast down in our mine. The rock is crushed and the iron extracted from it, consequently our bi-product is a sharp, crushed quartz, and the people who have used it for building purposes all speak highly of it.

We will take pleasure in sending you shortly the samples that Mr. Edison will get up for you.

Yours truly,

W. S. Perry

Treasurer.

472

Feb. 14, 1893.

John R. Wolcott Esq.,

Seattle, Washington.

Dear Sir:-

Your favor of the 6th inst. asking for information in regard to magnetic concentration of iron ore is at hand.

We know nothing about any practical results obtained at Brewster, N. Y. as that Company worked under patents other than thos of Mr. Edison's. Our plant at Edison, Sussex County, N. J. has been in operation for the past year or two and performs its work in a very satisfactory manner. I cannot tell you whether iron ore has been smelted by electricity as we have never tried it. I have never heard of its being done and very much doubt if there is any practical way of doing it. I should very much question if the process for concentrating iron was what you wanted out there as you have plenty of a high grade iron which can be mined cheaply and does not need concentration.

Yours truly,

W. S. Perry

Treasurer.

548
549

March 1, 1893.

C. A. Thompson Esq.,

Central Railroad Co. of N. J.

Dear Sir:-

Referring to conversation had with you this A. M. at your office and crossing the ferry, I submit in addition copy of letter from Mr. J. R. Olhausen and my reply to same addressed to Mr. W. H. Peddle. You will also remember our agreement and understanding last year when you ordered some 40 of the ~~these~~ series gondolas to Elizabeth yard to be lined for the sand trade and returned to Edison, N. J. From my knowledge of the facts which can be corroborated by Mr. G. L. Bryant, High Bridge and those conversant with the rolling stock of the N. J. C. R. R., if your people withdraw the lined cars and put them in the coal service, as enclosed telegram would indicate, we might as well quit the sand business for there are no cars in the service except an occasional box, fit to carry sand.

You ask Kipp

I did accept that long talked of order from Mr. G. D. W. Smith, Purchasing Agent, today, on condition that it would be subject to a change in price after you, Mr. Olhausen and Mr. Peddle had agreed on a [illegible] as we talked over.

548

We also have orders for some 20 additional cars from outside parties, and should you people decide to withdraw the only cars fit for use, we might just as well quit.

Kindly consider the matter and I will see you tomorrow.

Yours very truly,

J. Brash

501
383

March 2, 1893.

My dear Conley,

I told Wood to Smith to-day to say to you that owing to the sickness of my mother-in-law, Mrs. McKesson, I should not be able to go up to the Mill on Saturday. The old lady has pneumonia and probably will not live the day out. I don't believe there is anything to do up there so you will not care much whether I come up or not.

Mr. Walsh telegraphed me to-day a copy of a telegram which Mr. Bryant sent to me yesterday and also a copy of my answer to him. They seem to want to have our gons away from us. I think it would be well for the present to load our sand into the gons so as to keep them in use. It would be a great pity to loose the cars that have already been lined, which we will do if we don't load them.

Mr. Batchelor sailed to-day for Italy; He expects to be gone about two months. His wife was not well and he seemed to think this was a better time to go than the middle of May and I am not sure but that he is right.

I have just heard from the R. R. Co. that from now on, they are going to be very strict in regard to demurrage on cars. I hope you have no coal cars not unloaded, because if you have, we shall certainly be charged $1.00 per day per car for them.

Yours very truly,

W. L. Perry

SECRETARY.

574
538

March 3, 1893.

Alex. Elliott Jr. Esq.,

Paterson, New Jersey.

Dear Sir:-

Your favors of March 2nd are at hand. I note what you say with regard to your interview with Riggs. My idea is that you had better take a pretty firm stand with him. $100. in cash for an option to purchase the fifth interest in that mine for three years for $3000. or $4000. ought to be enough and I believe that considering Riggs has borrowed money on the stock that he will accept our offer if we stand firm and wait for a few weeks. If you differ from me in this matter, kindly let me have your opinion about what you think he would do.

In relation to the matter of the meeting held Feb. 20th, 1892, as I told you in my last interview, I am perfectly positive that Mr. Butler was present at said meeting but as I do not think it will pay to go into any controversy on the subject and as I was present as a director, I am quite willing to sign the minutes as Secretary, pro tem and the next time you are in the city, if you

537
569

will come in to see me, I will give you all data as I remember it, of the meeting and we can fix it up in the book but I think it would be better for us to go over it in an interview rather than for me to write you.

Yours very truly,

W. J. Perry

Treasurer.

SECRETARY,

578

600

March 7, 1893.

E. S. Jones Esq., Secretary.

Providence Lithograph Co., Providence, R. I.

Dear Sir:-

Your favor of Feb. 27th to our President, Mr. Thomas A. Edison, is at hand. We have several thousand tons of such grit or sharp sand as you describe which runs from No. 14 to No. 50 mesh (mixed). We can separate and make any uniform grade providing orders are sufficiently large to justify it. Our bi-product is largely used by Railroads for Engine Sand and is peculiarly adapted to that purpose. We also sell large quantities for building purposes, asphalt paving, garden walks etc.

Yours truly,

W. L. Perry

Treasurer.

300

March 15, 1893.

Arthur [illegible] Hare Esq.,

[illegible], Pa.

Dear Sir:-

Your favor of the 14th is at hand.

I am sorry to say that we have no more Concentrate on hand [illegible] unfortunately, until we start up the Mill again, you will [illegible] able to offer any, and I do not believe the Mill will be [illegible] before September, as the changes proposed by Mr. Edison [illegible] a new Mill.

Yours very truly,

W. L. Perry

Treasurer.

60-8
647

March 20, 1893.

Alex. Elliott Jr. Esq.,

Paterson, N. J.

Dear Sir:-

I had a long talk with Conley on Saturday and Conley told me to tell you to go ahead with the road and that by the time you wanted the plans he would have them ready to deliver to you, so you had better commence on the new road immediately. He also wished me to tell you that he was making inquiries on the subject that you asked him about, Search and McConnell. He says he has found out that Search's lawyer is to have 50% of what he collects and will get more particulars before long if he can.

I now beg to enclose you a letter that was sent to Mr. McCarthy in relation to a lot near our sand pile. Mr. Edison wishes that lot purchased if possible, at a decent price. Had you not better put yourself in communication with this Mr. Keenan, search his title and see what he owns and what it can be bought for. Let me hear from you on the subject.

Yours truly,

W. Libbey

Treasurer.

SECRETARY.

146

W. S. PERRY,
PRESIDENT.

March 21, 1893.

My dear Mallory,

Your favor of yesterday with the bricks are at hand. The bricks did not come in good order; one of them was entirely smashed up; the other was in fair shape. You have got to make them firmer than these are before the furnaces can use them satisfactorily. I am very much obliged to you for sending them and I am going to show the good one to Cutting tomorrow.

I think the chances are that I shall be out there tomorrow to see you. Nothing new here, in fact, no news of any description that I can hear.

Yours very truly,

W S Perry

W. S. Mallory Esq.,

Care Thomas A. Edison Esq.,

Orange, N. J.

SECRETARY.

622
648

March 28, 1893.

Alexander Elliott Jr. Esq.,

Paterson, New Jersey.

My dear Sir:-

Your favor of March 27th is at hand and I now beg to enclose you the minutes which you sent me for my perusal. I think they are correct and if you will kindly enter them in the minute book and forward same to the office, I shall be very much obliged.

With regard to the meeting of the stockholders of the Sussex County Iron Co., said meeting does not necessitate having anybody there, but, say, you with the proxies of Mr. Edison and myself. You can arrange the meeting at any place it suits you and Mr. Riggs. Send a proxy to me for my signature made out to you and the next time you are at Orange, get Mr. Edison to sign a proxy also made out to you. We wish at the meeting the same Directors elected that were elected last year with the exception of Mr. Insull. Leave him out and replace by Mr. Batchelor and the next time you are in the city, I will get out the 10 shares of stock in Mr. Insull's name and you can cancel said certificate

and issue 10 shares to Mr. Batchelor so that he can qualify. There will be nothing else to do at the meeting and you holding the proxies of the controlling interest can prevent Mr. Riggs from voting anything he may choose. I think it would be just as well to re-elect Mr. Riggs as President. I was in hopes that before the meeting Mr. Riggs would have given us an option on his stock but I presume he will hold off still later.

I see no reason for holding a meeting of the Board of the Directors before the meeting. Kindly let me hear from you on the subject of the stockholders meeting, whether I am correct or not in my idea.

I am very glad that Mr. Steele was able to shove the Newburgh case off the April term. As a rule, I am not fond of the delays of the law, but in such a case as this, I thank my stars you can do such things.

Yours very truly,

W.S. Perry

Treasurer.

by Alfred Peckham

661
673

W. S. PERRY,

April 3, 1893.

Alex. Elliott Jr. Esq.,

Paterson, New Jersey.

Dear Sir:-

Your favor of April 1st is at hand with Rigg's letter enclosed. I think when you see Riggs you might say in speaking about raising the price, that you have about as much right to say the price is lowered as he has to say tha price is raised. There is but one buyer; to be sure, there is only one seller but until we see fit to come up from our bid, he might start the stuff at $1000. per share and never get it. I think he is playing a great big game of bluff on you.

I note what you say with regard to the minutes of that meeting I already have a waiver of notice of said meeting signed by all of the Directors of the Company. I thought you had seen it or I should have mentioned it to you in my last letter. When you come in, ask to see it and you will find that it is all correct.

I should like to see you here in the office about paying out $1750. as I should have to have more data on the subject before I would pay it.

I note what you say about altering the by-laws of the Company and think it would be a good plan to change them and if you will draw up such a resolution, at the next meeting we have, I will bring it up.

Yours truly,

W P Perry

Treasurer.

P S. Enclosed please find Rigg's letter.

Letterbook, LM-208

This letterbook covers the period April-July 1893. Most of the correspondence is by William S. Perry, treasurer of the company; John P. Walsh, sales agent for sand; and Edwin I. Olmsted, clerk. The letters deal mainly with company financial obligations, stock transactions, equipment, supplies, and sand orders. Included are items pertaining to the purchase of insurance on Edison's life, with the company as beneficiary. One letter relates to the wages of Thomas A. Edison, Jr. The spine is marked "7." The book contains 697 numbered pages and an index. Approximately 5 percent of the book has been filmed.

W. S. PERRY,

46
49

April 11, 1890.

Alexander Elliott Jr., Esq.,

Paterson, New Jersey.

Dear Sir:-

We are in receipt this morning of your list of Mineral leases sent by you on April 10th. We have checked them off and find they are correct with the exception of No's 9, 13, and 14 which I see by your note at the bottom of your list are being recorded; also in the same package you sent the 48th annual report of the N. Y. Life Ins. Co. Not seeing anything marked in it and not knowing why you sent it, I hold it subject to your order as I presume it was sent by mistake.

What are you doing in regard to buying that lot that Mr. Edison wants, in the swamp; I believe the owner lives in Brooklyn. The last I saw from you, you did seem this lot was going to look up the title. As Mr. Edison will probably want to know shortly what you are doing in the matter, I should like to be informed how the thing is progressing by you.

Yours truly,

W S Perry

Treasurer.

58/85

April 21, 1893.

Alex. Elliott Jr. Esq.,

Paterson, N. J.

My Dear Sir:-

Mr. Cutting has not gone out to Orange yet but we expect to go tomorrow on the 1.30 train, therefore you will probably get news from me what we have decided to do regarding Rigg's interest in the Sussex County Iron Co. until I write you Monday, you getting the letter Tuesday. The delay, I think, rather favors our idea and I am quite sure that after Mr. Edison sees Mr. Cutting, he will allow us to do as we please which will be to let Riggs do the walking.

Yours truly,

W. J. Perry

Treasurer.

W. S. PERRY,
TREASURER.

179
21

May 19, 1893.

Geo. E. Raymond Esq.,

745 Broad St., Newark, N. J.

Dear Sir:-

Your favor of May 19th is at hand. I was very glad to get it as we are very anxious in the Company to get the Insurance on Mr. Edison's life all fixed and settled. I know that you are hurrying up as fast as possible and trust to have a favorable reply from you by Monday at latest.

Thanking you for your trouble in the matter and trusting to see or hear from you on Monday, I remain,

Yours very truly,

W. S. Perry

Treasurer.

179
248

May 26, 1898.

Geo. B. Raymond Esq.,

The Prudential Ins., Newark, N. J.

Dear Sir:

I was very sorry to get your favor of the 25th this morning stating that your Company had postponed the Insurance of Mr. Edison. I notice that you say the applications of the other Companies are under way. We are very anxious to get the insurance and trust you will hurry up the matter as fast as possible. Could we not get the whole $200,000. in the other Companies as I am satisfied that if we have to wait six months, we will not want any insurance at all. Kindly let me hear from you as soon as possible on the subject.

Yours very truly,

Treasurer.

212
958

June 2nd, 1893.

Geo. B. Raymond Esq.,

Newark, N. J.

Dear Sir:-

Your favor of June 1st is at hand.

I am going out this afternoon to Orange to see Mr. Edison and will show him your letter and will try to get him to arrange to come in to the home office of your Company for examination at an early date , and will let you know what success I meet with out there.

Yours very truly,

Treasurer.

2550
79

PERSONAL

June 5, 1893.

My dear Mallory,

Enclosed please find the letter which you sent me with your note asking it to be returned. I have had a long talk with Ed and he is all broken up. He, as I knew very well, had no intention in writing that letter, of putting it in the way he did. It will never occur again, I am sure and I trust you will bear no feeling against him for writing the letter as he is such a good clerk that I hate to see him feeling as he does now.

Trusting to see you here on Thursday, I am,

Yours very truly,

Treasurer.

P. S. I have just seen Raymond of the Mutual Life and he says Edison passed a first-rate examination but has made arrangements to come in again to see them for another test. Mr. R. is going up to see the Manhattan Life but thinks it would be well to wait until tomorrow or next day until he has a policy from the Mutual or when all the other Companies have reported favorably, and will then see them in regard to making another test.

W. S. Mallory Esq.,

Orange, New Jersey.

275
283

June 6, 1893.

W. S. Mallory Esq.,

Orange, New Jersey.

Dear Sir:-

Your favor of June 4th in relation to sample of sand is at hand. I am very much obliged to you for the bother you have taken in the matter.

Will you please inform Mr. Edison that I took out yesterday a policy in the London Guarantee & Accident Insurance Co. taking as a basis for our payroll $125,000. per year. The Company limits their liability to $2500. on any one man that is hurt and $15,000. on any single accident. They get a release from all people that are hurt in our employ and defend all suits brought against us by the laborers and in making a settlement with the people, they will pay one half wages for one year but they do not pay hospital bills. The Company is a strong one and will undoubtedly relieve us of all the expenses in any suits brought against us by people in our employ. I think it is well worth the $1800. that we pay for it, do you not?

Yours very truly,

Treasurer.

~~258~~
301

June 7, 1893.

Geo. B. Raymond Esq.,

745 Broad St., Newark, N. J.

Dear Sir:-

I was in hopes to have heard from you before this that some of the policies on the various applications you have made had been issued. Why is it if the Doctor's reports are so favorable that we cannot immediately get the policies? Kindly let me hear from you on the subject.

Yours very truly,

A. L. Perry

Treasurer.

301/370

June 10, 1893.

Geo. B. Raymond Esq.,

745 Broad St., Newark, N. J.

Dear Sir:-

Your favor of the 8th arrived yesterday while I was out at the Mill. I beg to thank you for the same and to say that I have forwarded a copy of it to Mr. Edison. Mr. Edison will be at your New York office at ten o'clock on Monday. I have telegraphed you to that affect. I also think that your suggestion to wait until the policy from your Company has been issued before the other Companies are approached is good.

Hoping that you will keep me fully informed about the case, I remain,

Yours very truly,

W. Berry

Treasurer.

304/318

June 13, 1893.

My dear Mallory,

Enclosed please find copy of a letter which Mr. Cutting has just received from the Mutual Life. Neither Mr. Cutting nor myself understand it. I have written to Mr. Raymond at Newark for an explanation and have asked him if there was no other way for him to get out that amount of insurance with any of the other Companies and for him to kindly let me know what he proposed doing in the matter. I don't know whether this letter had better be shown to Mr. Edison or not. I think you are the best judge. It might worry him. I also enclose a copy of a letter which I have received from the Acme Coal Co. Will you kindly talk the matter over with Mr. Edison. With regard to our making a yearly contract for our coal, I do not know if it would pay to to take the matter up now but I should like to have Mr. Edison's opinion before doing it. My only idea of speaking to you about it is that sometimes we can at this season of the year get our coal cheaper than by waiting until fall. Will you kindly let me hear from you on the subject.

317/371

I have been thinking over this Insurance business and would like to know if this sort of a scheme would be entertained by Mr. Edison. At any rate, I should like to hear fromyou about it. Supposing Mr. Edison did his own insurance. We would have had to pay the insurance Co's something like $3,000. or $4,000. for $150,000. insurance for one year. Supposing we were to pay over to Mr. Edison that amount of money and that he puts a certain amount of General Electric stock in escro, say for $150,000., he would put up 2000 shares of General Electric and as the assessments were called, withdraw enough of the stock, lessenning the amount as the assessments are called. I don't know that I have explained my idea. I don't know that it is feasible but I should like to hear from you what you think of some such plan.

Yours very truly,

W. S. Mallory Esq.,

Orange, New Jersey.

260

COPY.

June 13, 1893.

My dear Mr. Cutting:

Referring to the application for insurance on the life of Mr. Edison, I beg to inform you that the Company has decided not to write him at the present time for any additional insurance.

I regret that there should have been so much delay in the consideration of the case, but it was unavoidable under the circumstances.

It is due to Mr. Edison to say that our examiners did not find the conditions of urine first noted, and so far as that was an element, in our estimation it has disappeared.

Yours very truly,

(Signed) Walter R. Greene.

R. L. Cutting Esq.,

19 William St., New York.

308
329

June 13, 1893.

Geo. B. Raymond Esq.,

745 Broad St., Newark, N. J.

Dear Sir:-

Mr. Cutting has just heard from Dr. Goelet of the Mutual Life that your Company has decided not to write Mr. Edison at present but says that neither of the examiners found the conditions of urine first noted and so far as that was an element, in our estimation it has disappeared. What is the matter? What can you do with regards insuring him? I should like to hear from you on the subject as soon as possible. After we find that we cannot insure him, we want to a great deal more than we did before. Besides that, Mr. Edison is very much annoyed to think that he is rejected. Are there no other Companies that you could go to to get policies on his life even if we don't get more than $100,000. or $125,000. Kindly let me hear from you on the subject or see you if you are in the city.

Yours truly,

W H Meadowcroft

Treasurer.

325
331

June 14, 1893.

My dear Mallary,

Enclosed please find copy of a letter which Mr. Cutting has just received from the General Manager of the Mutual Life Ins. Co. It is an explanation after a fashion of what we wanted, but it is a sort of left-handed explanation.

I have written as I told you to Mr. Raymond asking him to come over here or write me fully what he could do as regards getting the insurance in the other Companies. I expect to hear from him tomorrow morning. In case I do not, I shall telegraph him asking for an appointment.

Ed has written quite a long letter to you to-day giving the bids that he received yesterday from the different companies for making washers and bolts. He has been out all day seeing the other people and you will probably hear from him tomorrow on the subject.

Yours very truly,

Treasurer.

W. S. Mallory Esq.,

Orange, N. J.

320

330

June 14, 1893.

Geo, B. Raymond Esq.,

745 Broad St., Newark, N. J.

Dear Sir:-

One of our Directors in this Company received this morning from your general Manager, Dr. Gillette a letter of which the following is an extract: "If Mr. Edison should apply elsewhere he can truthfully say he was not declined here because of any evidence of disease found upon him. It was simply because we do not care to take risks on term rates of insurance".

Does that mean that if Mr. Edison would take out a regular life policy that he could get a policy from your Company for $50,000. or does it mean that it is a polite way of saying they do not want him.

I wish if you can possibly fix it that you would come over here to see me. I will be here at this office tomorrow from 12 o'clock up to 3.30. I will be here Friday any ime after 10 and up to 3.30 o'clock and I should like very much to see you as I am very anxious to know what show there there is of getting this insurance on Mr. Edison's life.

Yours truly,

Treasurer.

329

P. S.- Can you kindly find out from me the address of some good real estate broker in Newark? I have a friend here who is in the navy and stationed here now, who owns some property in that city and he is very anxious to be put in communication with a good real estate broker.

357

June 16, 1893.

John A. McCall Esq., President,

New York Life Insurance Co.,

New York City.

Dear Sir:-

I beg to remind you of the conversation I had with you on the Long Branch boat yesterday as regards insurance on Mr. Edison's life by your Company. I have found since talking to you that your Company did not want to write what is called term insurance but that they would write him on plain life policy. Our insurance broker in Newark writes me this morning that he has seen your agent in Newark and that the matter will be taken up by your Company for $50,000. or $100,000.

I am sorry to have to trouble you in this matter but I understood at the time of speaking to you that Mr. Edison had been examined and for some reason was rejected.

Yours very truly,

[illegible] S. Barry

Treasurer.

330
437

June 19, 1893.

Geo. B. Raymond Esq.,

745 Broad St., Newark.

Dear Sir:-

Your telegram of to-day is at hand. I am very much obliged to you for it. I think as these telegrams are all simply for my convenience, you had better not pay them but send them collect.

Can you not have the policies of the other Companies made out direct to our Company instead of having to go through the bother and formality of an assignment from Mr. Edison? Would it not be meuh easier for the companies to do so?

Trusting to ~~hear~~ de! from you either to-day or tomorrow with the policies from the Mutual and the Cincinnati, I remain,

Yours truly,

W. D. Ray

Treasurer.

405
407

June 23. 3

Mr Perry was telephoned me, that young Tom Edison, had not received his money, and that he wanted to be advanced some cash

Mr Perry wants to know whether he has received his last months pay, and to ask you Edison, if he wants more money, and if such is the case to advance it to him

P.S. His envelope 487 is among those left with you on Saturday last.

Please take notice that all offices, close at 1 P.M. during summer so that if you ring up on Phone for anything do it before then

E. Bond

353
466

June 28, 1893.

Geo. B. Raymond Esq.,

746 Broad St., Newark, N. J.

Dear Sir:-

Enclosed please find the letters which you left with me to read and I am very much obliged to you for the same. I received the policy of the Union Central for $20,000.00 which you left here and I am just now in receipt of your favor of the 28th enclosing the assignment of said policy to our Company which I also wish to thank you for. I also note what you say of the Provident Life & Trust Co. issuing a policy for $25,000. which I am very glad to hear. What is the reason that you don't get another $5,000. from the Mutual? I have not heard from you lately on that subject but trust that they will issue it. The amount of commission which you paid me on the Union Central is perfectly satisfactory after conversation that I had with you on the subject.

Trusting to hear from you shortly that you have gotten out some more policies, I remain,

Yours very truly,

W. S. Perry

437
484

June 30, 1893.

Geo. B. Raymond Esq.,

74 Broad St., Newark, N. J.

Dear Sir:-

Your favor of the 29th is at hand. I do not care about your taking any policies on Mr. Edison's life in assessment companies. I do not think that our Board of Directors would be satisfied to have me spend any money for a policy in a Company which is not sure to be in existence five or six years from this time.

I was in hopes this morning that I should get from you the policy in the Provident Life & Trust Co. for $25,000. which you wrote me the day before yesterday had been written. I trust you will soon have these different policies written as we are very anxious to get Mr. Edison's life insured as soon as possible.

Yours very truly,

W. S. Rice

Treasurer.

484-

July 5, 1923.

Mr. Geo. E. Raymond,

Newark, New Jersey.

Dear Sir:-

Enclosed please find this Company's check for $425.0 , the premium on policy No. 5825 in the Provident Life & Trust Co. which was received here on Monday. I note what you say about the commission and it is perfectly satisfactory as the price that you get the policy at I consider low. I trust to hear from you in the next day or two about some of the other Companies. Are you not going to get $5.000. more in the Mutual? Hurry this matter up all you can as we are very anxious to have more insurance on Mr. Edison's life.

Yours very truly,

W. H. Perry

July 12, 1893.

The Provident Savings Life Assurance Society,

Dear Sirs -

Our interest in Mr. Edmon's life insurance is to protect future subscriptions to the authorized stock of this Company which he will have to pay, if living, and which we want to secure if he dies.

Yours very truly,

New Jersey & Pennsylvania Concentrating Works,

by W. L. Perry

Treasurer.

July 14, 1893.

Thomas A. Edison Esq.,

Orange, New Jersey.

Dear Sir:-

Enclosed please find your application to the Provident Savings Life Assurance Society of New York. The Company requested to have your application made payable to yourself and you then assign the policy to us. The enclosed application you can destroy.

Yours very truly,

W. J. Perry

Treasurer.

July 20, 1893.

Geo. E. Raymond Esq.,

745 Broad St.,

Newark, N. J.

Dear Sir:-

Your favor of the 19th is at hand. I now beg to enclose you the application to the Prudential Insurance Co., for a $10,000 20 year life policy. I do not like, however, to take out 20 year insurance. I would prefer plain life, but as beggars can't be choosers, I have signed the application, but trust that in the other Companies you will be able to take out the plain life.

I trust to hear from you shortly that some of the other Companies have accepted him.

Is it not about time for me to receive the Policy for $20,000 for the Provident Savings Life Assurance Society, application for which you say you sent in some time last week ?

Yours very truly,

W. C. Perry

Treasurer.

July 21, 1893.

Geo. B. Raymond Esq.,

745 Broad St.,

Newark, N. J.

Dear Sir:-

I beg to advise you that we received at this office this afternoon by Special Delivery/3:30 P.M./Policy #16816 on the life of Thos. A. Edison.

This policy will be handed to our Treasurer, Mr. Perry, on his return from the World to-morrow, and he will probably send you check.

Yours very truly,

E. J. Wardle

Edison & Co.
Phonograph Co. & Kinetograph Co.

July 22, 1893.

Geo. B. Raymond Esq.,

745 Broad St.,

Newark, N. J.

Dear Sir:-

Your favor of the 21st with Policy #16816 for the Prudential Insurance Co., for $10,000 on the life of T. A. Edison, at hand and I now beg to enclose you check in payment of the first years premium, $328.30.

What is the matter that we have not got the policy for $20,000 of the Provident Life Assurance Society yet, and how are the other applications progressing ?

I should very much like to know from you what chances we have got of getting any more insurance.

Yours very truly,

W. D. Gray

Treasurer.

Letterbook, LM-209

This letterbook covers the period July-November 1893. Most of the correspondence is by William S. Perry, treasurer of the company; John P. Walsh, sales agent for sand; and Edwin I. Olmsted, purchasing agent. The letters deal mainly with stock transactions, company financial obligations, equipment, supplies, and sand orders. Included are items pertaining to the purchase of insurance on Edison's life, with the company as beneficiary; the market price of General Electric securities; and general economic conditions. One letter relates to a directors' meeting of the Edison Ore Milling Co., Ltd. The spine is stamped "8" and is labeled "From July 25, 1893 To Nov. 18, 1893 N Y Office." The book contains 1002 numbered pages and an index. Less than 5 percent of the book has been filmed.

July 25, 1893.

Robt. L. Cutting Esq.,

U. S. Hotel,

Saratoga N. Y.

My dear Mr. Cutting :-

Enclosed please find an undertaking on appeal which demands two signatures for $500.00 each. I have put your name down as one and I have gone in on the other. I have not asked Mr. Edison because they have to be residents of New York state. After you have signed where your name is marked in pencil get a Notary Public to witness it, and send the same down to me so that I can have it by Thursday, and very much oblige.

Everything is going along all right. Mr. Edison has given out, as I wrote you last, all his plans for the different machinery and it has all been contracted for to be finished by the 15th of September. He telephoned me this morning that he was very much pleased with the way things were going on, and was going up to the mill to-morrow to be there until Friday.

I heard from our insurance agent this morning, and he says that we will probably get $50,000 more on his life. If that is so, it will make an even $100,000. I haven't any news to

7/25/93.

R.L.C. (2)

write you. Everything here is very, very blue, and stocks keep going lower and lower; but I cannot find out anything against the General Electric Co., although I have been trying hard for the past few days.

Trusting you are having a good time at Saratoga, and that you are all well, I remain,

Yours very truly,

A L Ivey

July 27, 1893.

W. S. Mallory Esq.,

My dear Mallory :

Mr. Bogert of Bradstreets has just come in and handed me Bradstreet's report of 91. They are getting another report for ud up to date which I will send you just as soon as it arrives. You will notice that F. P. Howe in 91 was the Treasurer. Mr. Howe is my friend and is at present Vice President and Manager of the North Branch Steel Co., I did not think at the time you made the contract, about Howe having been with the Mahoning Rolling Mills Co., but I now remember about a year ago, in talking with him about his change, he told me that although he considered the Mahoning R.M.Co.. perfectly solvent, and the men were interested in it good, still they were doing business on a very small capital and his offer from the North Branch Steel Co., was so much better, he had left them and gone with his present concern.

I have not written to Howe about the Company as I don't believe he would know how they stand at present and he might not feel like giving me an answer even if he did know.

July 27,1893.

W.S.M. (2)

I have left word here at the office that if any letter comes from Bradstreets to me to-morrow, it is to be opened and the contents forwarded to you.

Trusting I will be able to give you a good report in a few days, I remain,

Yours very truly,

W.S.Kerr

TREASURER :

P. S.

Mr. Bogert has just come in and handed me the enclosed report on the Mahoning Mills Co., up to May 1893.

It seems to me it is a very good report .

W.S.K.

Aug. 2, 1893.

Alexander Willett Esq.,

Paterson, N. J.

Dear Sir:-

Your letter of yesterday at hand as well as package by express. I checked over the papers in the express package and they tally with the five pieces that you mention in your letter. Why do you not send me an assignment of the mortgage from T.A. Edison to our Company. As we stand now, if I understand it aright, we are simply holding an assignment of mortgage ~~from~~ to T A. Edison on which this Company has paid the money.

Enclosed please find the copies of letters which you sent to me. I am very glad you have taken the matter up. I presume you are in communication with Mr. Edison on the subject and am glad that we may see some chance of reducing royalties.

I note what you say in regards the contract with Gardner and know that if any contracts are left in your hands that we will have them as correct as they can be.

I also note what you say in regards the Laboratory summons of the various people that are suing us and trust that the matters will have your careful attention now and at all times, and that

XX 8/2/93.

A.E. (:)

The result will justify our leaving them in your hands

Trusting to see you in here before very long to talk over matters, I remain,

Yours very truly,

TREASURER.

XXX Aug? 2, 1893.

Thos. A. Edison Esq.,

Orange. N. J.

My dear Mr. Edison :

Enclosed please find Dyer & Seeley's bill against the Edison Ore Milling Co., As it is much larger than any bill that has heretofore been presented I should like to have you O K it before putting it through our books. I presume it is all right, but as I have not had anything to do with the case that is going on against Ball & Norton, I think it best to send it to you.

I have spoken to Mr. Steele about our tax bill that I was talking to you about yesterday and he has telephoned to Albany and the man is to be down here Saturday to see us. From the way he talked over the wire I fancy that twenty-five or fifty dollars handed him will keep the matter open so that we will not have to pay anything before January or February next. He intimated that he could fix it but it might mean that he would want some little money. If I can delay payment until February I judge you will feel that it is perfectly satisfactory.

8/2/93.

T.A.V. (C.)

The market opened [illegible] today and has been strong all day. There is a much better feeling in the "Street" than we have had for some time past. The Edison General closed at 49: I think part of that rise was made by the shorts covering, still I doubt if we will see the low prices of last week again.

Yours very truly,

TREASURER:

AUG. 3, 1893.

T. A. Edison Esq:-

Orange, N. J.

Dear Sir:-

I this morning received a telephone bill for the use of telephone in this city for the month of June, and I find charged against us the sum of $42.00 for messages sent to Akron, O. Those were sent by MR.Miller while he was in the city. As it is a rather larger item than I thought it would be, I write you asking you what disposition to make of the charge. Shall we send a memorandum to MR.MILLER or pay it here and say nothing about it ?

The market is pretty strong here to-day,- General Electric having sold up to 50. It is now about 49. I think the rise of yesterday and to-day has been largely owing to the covering of shorts. There seems to be a much larger short interest in the market than was visible, owing to the great number of Brokers having sold out their customers' stocks making them apparently even in the market and yet short as regards their customers. That amount cannot be estimated as it doesn't appear in the market and it may be so large that prices will go considerably higher before there is any setback.

Mr. Clark, the Vice President of the U.S.TRUST CO., told me

Aug. 3, 1893.

T.A.E. (2)

this morning that he thought the corner had been turned and from this on we would see rather better times.

Yours very truly,

A. D. Perry

TREAS'R.

Aug. 10, 1892.

Geo. E. Raymond Esq.,

745 Broad St.,

Newark, N. J.

Dear Sir:-

As I have not heard from you for some time, I presume the different Companies that you have applied to have turned Mr. Edison down and, owing to the fanancial troubles that seem to be gathering in upon us, I think we do not care to take any more Insurance at present; therefore if you will kindly cansel all applications that you have made, you will greatly oblige,

Yours very truly,

W. L. Bevan

TREASURER:

Aug. 14,1893.

W. S. Mallory Esq.,

Buena Park, Ills.

My dear Mallory :-

Enclosed please find Sand Account for the month of July, showing a profit of $251.00 and showing that we have shipped 1583 tons of sand; and, as you can see, some of it went out at a dollar, but the bulk of it at 25c. Now that is nothing to what we could have done if the Mill had worked half as much as they could. We certainly could have shipped 2500 tons and the expenses would have been very little more. As I told you Sat urday, we have an order now for 20,000 tons for F.C.O'Reilly at 25c. per ton;- we have an order in the office for 2000 tons for the Central R.R. at 50c.; We have an order, or can get an order from the D.L.& W. for 5000 tons at 50c. and we are negotiating with the Metropolitan Traction Co., where, if we could supply them with decent material in a regular manner, we could probably ship about 3000 tons per month at 60c. per ton. Now with all these orders and the expenses not much more, it seems a pity that we should not, during the next three months, get rid of most of our sand heap out there, and at the same time show a good profit. If you can only fix it so that the business can be taken hold of in a businesslike

Aug.14,1893.

J.S.H.

Summer up at the Works, I am satisfied that I can keep them busy with orders.

I have got very little news to write you. General Electric is down to-day in the neighborhood of 42 without much doing.

Trusting you will have a good time out at Chicago, and that we will see you back here a little in a couple of weeks, I remain

Yours very truly,

A.C. Dawes

Aug. 16, 1893.

Walter S. Mallory Esq.,

My dear Mallory :-

Enclosed check has just come back to us for your indorsement. It is no use going for you for carelessness in not indorsing it, for it is just as careless in me for not seeing that it was not endorsed. If you will kindly put your name on the back above where I put mine for deposit, and return it to me, I will be very much obliged to you.

I have not much of any news to write. General Electric is down to 38 again but I can't help feeling that we are very near bottom on the stock. The drop this morning was largely owing to the Northern Pacific going into receivers hands. As far as other news is concerned, I have not any. I am going to pay the men off, as I told you last Saturday, next Saturday in 10 dollar checks, virtually payable to bearer, made out in my name and indorsed by me. They may not like it, but I cannot help it, they have got to take it. I am not going to pay a premium for currency to oblige the men, when I can supply them with something just as good for nothing. Tell Mr. Edison when you see him that I am going to take Bob Cutting out to Vortmann's next Friday and that he

Aug. 16, 1893.

A[illegible]

W.S.M. #2

will spend Saturday at the Mill and Sunday with me at Kenvil. I [illegible] don't think there is anything now the matter with him except that [illegible] he is thoroughly demoralized and all he wants is a little tonic in the way of talking to brace him up. Trusting you are having a good [illegible] time in Chicago and that we will see you shortly, I remain,

[illegible] will [illegible] Yours very truly,

[illegible]

Aug. 21. 1897.

John H. Wood Esq.,

38 Liberty St., N.Y.

Dear Sir:-

Your favor of August 21st, asking us to please have the enclosed statement filled out by the physician, and that the London Guarantee Co., will be satisfied with this, is at hand. Will you be kind enough to tell me what you expect us to do? If you think that the amount of money we are liable to pay on any insurance we carry by which we get half wages on the man who get hurt, that we will have to go to the expense of going to Paterson or any other town they happen to go to, to get statements filled out, I beg to say I don't want the insurance, and if the statements are to be sent back to us to have us look them up, I beg to say I think the Policy had better be cancelled now and at once. You can readily see if I send this blank out to the St.Josephs Hospital that they would probably not know how to fill it out, and that I would either have to go there myself or send our lawyer there to show them how to fill it out; and in either case our expense would be pretty nearly what we get from the Insurance Co.,

If they are not satisfied with the statements which you give

Aug. 21, 1893.

J.H.W. (3)

them for this Company, which we will sign, they must either find out for themselves or have them cancelled.

Yours truly,

W. F. Perry

Treasurer.

Aug. 31, 1893.

Alex. Elliott Jr.,

Paterson, N.J.

Dear Sir:-

Your favor of the 30th is at hand, enclosing copy of contract with Gardner, and also your letter on the subject that we were talking about. I think that letter is about as I wish it. I have changed one or two lines which I will show you when you are next in the city. Before sending this letter I am going out to see Mr. Edison and ask him if I can. If he will not allow me to, I am going to show it to the various stockholders to see if it meets their views on the subject.

I wrote Julia A. King yesterday at Mine Hill that we had mailed her a check on the 12th of this month for her royalties, and am surprised that she has not received it. I presume that the check, if it has gone astray, will be forwarded back by the P.O. authorities, when I will re-mail it to her.

Yours very truly,

TREASURER.

Sept. 2,1893.

H. H. Vreeland Esq., Pres.

Dear Sir:-

Replying to your telephone communication will say that Mr.Edison is expected from Chicago on Monday. It is his intention to take up the sand question and put in the necessary machinery for the purpose of separating the different meshes. I hope to see you not later than Wednesday, when I will furnish g full particulars.

Yours very truly,

Sept. 5, 1893.

J. H. Oelhausen Esq., Supt.

C.R.R. of N.J.

Dear Sir:-

Some time ago our people were negotiating with you about putting in a track at our Works at Edison, N.J. We have now concluded to do it ourselves and at our own expense; but will ask you to advise Mr.P.H.Wycoff, Gen'l Fr't.Agt. to carry 160 tons of steel rail at 50c. per ton, Jersey City to Edison, N.J.

Awaiting your early reply, I am,

Yours very truly,

Sept.12, 1893.

Benjamin Nicoll Esq.,

Pres. Mt. Pleasant Mining Co.,

68 Wall St., N.Y.

Dear Sir:-

Your favor of the 11th asking for a pass for Mr.Lord to go over our Mill is at hand. We are not running at present and are simply putting in machinery and there would be nothing to see up there as everything is in confusion.

Later on, if Mr.Lord would like to go up and look at it I have no doubt Mr.Edison would take great pleasure in showing him the Mill.

Yours very truly,

TREASURER :

Sept. 12, 1893.

Thos. A. Edison Esq.,

Orange, N.J.

Dear Sir:-

Enclosed please find statements of the New Jersey & Pennsylvania Concentrating Works and New York Concentrating Works for the month of August 1893.

I enclose you three notes which I would like to have you countersign. #253 is for the Central Forge Works for their bill for the month of August, payment of which we can make in a four months note. #254, the Mahoning Rolling Mills Co., is 50% of what we have to pay them on Sept. 15th, Mr. Mallory stating that the terms are 50% cash and 50% in a 4 months note with 6% added. #255 is for John H. Wood for Insurance. I have not seen him yet in regard to taking a note, but feel satisfied that he will do so. Also a description of an engine which the Manhattan Railway Co., have for sale, price $1,500; the only one they have at present on hand. Two letters, one from Christine Lee and from Thos. J. Hudson in relation to which I think I have letter indicating locomotives and platform cars.

Sept. 12, 1893.

T.A.E. (2)

The sand account for August only shows a profit of $83.39 the shipments from the Works falling off for the month, owing to the storms, from about 1600 tons in July to in the neighborhood of 1200 tons. Walsh's expense account for $50.00 includes expenses that he was at in getting freight rates and in shipping the engine from Briggs' to Ogden. We ought to be able to ship a great deal more sand than we did from there. Now, I received notice from the Works to-day that there was no sand shipped yesterday as the men who usually load sand were needed for something else. Now as we have orders for something like six cars a day right along, it seems a pity that we shouldn't get this into good shape as I am satisfied we could make several hundred dollars a month if properly handled.

Randolph has just telephoned me that you are very anxious to get a quorum of the Edison Ore Milling Company next Monday. I don't believe we are going to be able to. The following is a list of the directors:

Thos. A. Edison

Chas. Batchelor, Chicago.

Sept. 12, 1893. 457

T.A.E. (3)

R. L. Cutting,	here
Walter Cutting,	Pittsfield, Mass.
W. S. Perry,	here
A. C. Tate,	here
Thos. Butler,	Don't know where he is.
H. de Selding,	here
P. Schulze-Berg,	Germany

From this list you will see we will probably not get a quorum, but I will try to have one. If we do not, in December we have a Stockholders Meeting and then, with your permission, we can drop Mr. Butler and Mr. Schulze-Berg and put in two men that can always be counted on here, and in that way we will surely get a quorum at every quarterly meeting; at any rate if I can get a quorum I will attend to fixing up your accounts; and, as you control the Company and have signified to me that you wish the stock in the Treasury transferred to you in payment of your account, at $15.00 per share, I don't see as anything can be done with it until you get it, as when ever a quorum of the present Directors are together, your wishes will be carried out.

Yours very truly,

TREASURER.

Sept. 13, 1893.

Thos. A. Edison Esq.,

Orange, N.J.

Dear Sir:-

Your favor of the 12th in relation to the sand business is at hand. I will call Mr. Walsh off from trying to sell any more for the next two or three months; but until you commence to make your tailing way, I will fill, as far as I can, the orders we now have on hand.

Yours very truly,

TREASURER.

Sept. 14, 1893.

H. De Selting Esq.,

56 Liberty St.,

Dear Sir:-New York, N.Y.

I find on consulting the other Directors of the Ore Milling Co., that it will be impossible to get a quorum for next Monday. What I propose to do is, as nobody will be here on that date, I will adjourn the meeting for one week and if you will kindly be here at one o'clock on the 25th instead of on the 18th, I think we can get through with what little business we have got on hand as I feel confident there will then be a quorum.

Yours very truly,

TREASURER :

Sept. 25, 1893.

E. A. Stevenson Esq.,

My dear Stevenson:

This will introduce to you Mr. Peter Vorhiss, a life insurance broker, who has done most of Mr. Edison's business, and if he is as smart in the business as Mr. Edison claims he is, if you are thinking of taking out any life insurance, he must be the man for you to see.

Yours very truly,

Sept. 25, 1893.

J. E. Price Jr., Treas.,

Acme Coal Co.,

615 Drexel Bldg., Phila, Pa.

Dear Sir:-

Your favor of Sept. 20th is at hand. I showed the letter to Mr. Edison, and he said he thought that very likely the slack coal would be what we could use to advantage, but that he did not like the idea of changing from the coal you supplied us with last year as he thought that was as good coal as any he ever tried. I think it would be very well for you to send us an analysis of the Cumberland coal and the Slack coal as well. I should like to show it to Mr.Edison and very likely he will agree to using it.

I beg to enclose you your bill of Sept. 18th. The Railroad Company makes the weight 94,214 pounds instead of the amount you bill for of 95,700. Will you kindly look it up and see if there has not been a mistake at your end of the line, and let me hear from you as soon as possible.

Yours very truly,

Oct. 2, 1893.

Thos. A. Edison Esq.,

Orange, N.J.

Dear Sir:-

We had a meeting of the Directors of the Edison Ore Milling Co., and re-organized by electing officers, which should have been done last year if we could have got a quorum,- putting Mr. Batchelor in as President, Mr. Walter Cutting declining,-: Mr. A. O. Tate as Vice President; Mr. R. L. Cutting was re-elected Treasurer; and I was re-elected Secretary.

I submitted your accounts to the Board and they authorized issuing of the Company's stock, 1600 shares at $15.00 a share the money to pay your open accounts which amount to $10,552.56,- the interest to be paid up to date on the note of this Co., that you hold, which is about $4,500, and the balance to be endorsed on your note.

1600 shares at $15.00 would be $24,000; 10,500 open accounts to be paid; $4500 interest; and about 9000 to endorse on the note that you hold for $37,000.

There was a gentleman in here to-day, Mr. Chas. F.

Oct. 3, 1893.

T.A.E. (2)

Robbins, who asked me about the Brennan Crushers which you have up at Edison. He would like to know the best price that we would sell one or two of the smaller ones for, and if possible, to tell him about what power it would take to run them, and about their capacity. He has a mine in North Carolina, I think a gold mine, and he is talking about putting in a crushing plant.

Will you kindly let me hear from you on the subject?

Yours very truly,

T R E A S U R E R:

Oct. 23,1893.

Samuel Insull Esq.,

Chicago, Ills.

My dear Sam:-

Your favor of the 19th arrived here while I was up at the mine, but I received it this morning on my return. As I wrote you in my last, I am very much obliged to you for being willing to entertain my sister over night, and it goes without saying that she will have a first rate time with you, if it possible for you to give it to her. I had a copy of your letter sent down to her on Saturday from here, and I presume she will be able to send you word whether she is going on the Lake Shore or Michigan Central, and she will get out, undoubtedly at 22nd. St.,

I note what you say about the possibility of your being East next month. I hope you will come as it has been a good while now since I have seen you, and notwithstanding what you have written about Chicago, I think all provincial men need to get to the Metropolis once in a while to be brushed up. I shall be very glad to see Gordon if he comes in, as what little I have seen of him, I like him.

(2)

S. I.

You say money is extremely easy in Chicago for everything except commercial paper. Well it is exactly that way here. It is very hard to get commercial paper, but call money on good securities can be had at a nominal rate of interest. The Banks have not had as big a reserve as they have now since '84, and it seems to be piling up on them every week, but that does not start new business enterprises and I question if much of any business does start up until after Congress has fixed the tariff so that we may know what to expect for the next three years.
You undoubtedly are right in regarding the currency that the Fair is taking in at Chicago making money easy there, but after all when it's all over what will they do with the money. If no new business is being started the banks would really be better off if they hadn't quite so much. I don't think , feeling as I do, that it is doing you or I any good to write, but I must say that I am feeling very blue with regards the future of business for the next year or so.

Clinton Mc.Kesson is thinking of going to Chicago on Thursday for three or four days. His firm has a house there for the season, so I presume he will go there, but I told him he would make a great mistake if he did not look you up. He is not at all well,- is suffering, I think, from nervous dyspepsia, and I

(3).

S. I.

think the change will do him good. If you see him, and I think you will, brace him up all you can. Mrs. Perry is not at all well, but the children are fine.

Trusting to see you here in a week or ten days, I remain,

Yours very truly,

OCT. 30, 1893.

NORTH CAROLINA STEEL & IRON CO.,

GREENSBOROUGH, N. C.

DEAR SIRS:-

In reply to your favor of Oct. 23rd., in relation to the cost of a plant with capacity of 100 tons of magnetic ore, will say that Mr. Edison does not care to give any data until we have proved the practicability of our Works at Edison, and that you had better hold off until January or February next and see what we can do.

Yours very truly,

TREASURER :

Nov. 3, 1883.

Arthur W. Pawq

615 Drexel Bldg., Phila, Pa.

Dear Sir:-

Your favor of the 2nd. would have been answered before, but I have been out of town for several days. Mr. Mallory told me that he saw you at Orange but that Mr. Edison did not owing to his being very busy. I was sorry that you were not able to see him, but do not know as it would have made a great deal of difference. There has been nothing done officially with your friends Messrs. Pilling & Crane by this Company, but I have an idea that Mr. Edison, who now absolutely controls this Company may do something with them as they are now constantly in communication with each other. The minute I hear of anything being done, I will let you know.

Trusting it will turn out all right so that you can still be able to do business with us, I remain,

Yours very truly,

Nov. 8, 1883.

MESSRS. BATON & LEWIS,

44 BROAD ST., N. Y.

DEAR SIRS :-

Your bill for services to the Ore Milling Co., is at hand. The Company at present have no money, but when the N. J. Co's. mill starts up this Winter, they will probably be in funds and I will then take pleasure in bringing your bill before the Board of Directors and when ordered by them will take pleasure in sending you a check.

Yours very truly,

W. Perry

TREASURER :

Nov. 15, 1903.

My dear Mallory:

On Saturday, I wrote Mr. Edison enclosing him a copy of a letter I had just received from the Acme Coal Co., in which they quote of the "Black" coal from the Cumberland District which they could supply us at $2. a per gross ton. On Saturday Mr. Edison spoke to me about getting some "Black" coal. Will you please let me know if the change we made a carload from these parties. If we can burn it up at the Works it would save us about 50c. a ton, as I do not believe we can get the coal we have been using at less than $3.35 to $3.40 per ton.

There is nothing new here in the way of the market. General Electric sold down as low as 41 1/4 to-day but I believe closed about 42 1/8 which is about the price it closed at Saturday.

Enclosed please find the N.Y. Edison Conc. Co., and N.Y. Conc. Co. statements for the month. You will notice in the cash statement for the past month. You will notice in the N.J. statement a large amount of bills payable. That you will find was $10,000 due Mr. Edison which was borrowed of him last month and which was paid for on the call of the 6th. of this month. Also the account of $1,350 to Mr. Edison which was also paid for to Mr. Edison on the 6th. Will you

Nov. 17. 1883.

W.S.H. (2)

kin[illegible] [illegible] whether it is all right now to close [illegible] the Canada Iron Works [illegible], the Reading Iron Co., how [illegible] I shall [illegible] the Dalhousie Iron Co., - whether the Glenbrook Steam Boiler works account is in condition to close, and also the [illegible] amount [illegible] I am to pay the Manning Rolling Mills for this month ?

Yours very [illegible],

[signature]

TREASURER.

Nov. 16, 1893.

G. [illegible] Bailey Esq.,

Edison, N. J.

Dear Sir:-

I beg to acknowledge receipt of your favor with the Andover Co's. tax bill for the present year. I am afraid we will have to pay it. It is the taxes on Scrub Oak, but in looking over the Lease I find the Works have to pay all taxes, but I have sent the bill to Elliott to see if it can be reduced, or if there is any way we can get off from paying it.

Yours very truly,

W. H. Berry

TREASURER.

Letterbook, LM-210

This letterbook covers the period November 1893-July 1894. Most of the correspondence is by William S. Perry, treasurer of the company; John P. Walsh, sales agent for sand; and Edwin I. Olmsted, purchasing agent. The letters deal mainly with mining property leases, company financial obligations, stock transactions, equipment, supplies, and sand orders. Included are items pertaining to the purchase of insurance on Edison's life, the market price of General Electric securities, and general economic conditions. One item relates to a fall suffered by Edison at the Odgen works. The spine is stamped "9," is marked "Indexed O K," and is labeled "From Nov. 20, 1893 To July 5, 1894 N Y Office." The book contains 998 numbered pages and an index. Approximately 5 percent of the book has been filmed.

Nov 20 3

Mr Robins would like to have answer to the following

Has test of Steam Hose begun?
If so, when did it start?
How does the Hose work?
When will it probably prove out?
If it has not yet begun, when will it [illegible]

Nov. 21, 1893.

S. D. Kelly Esq.,

9 Fletcher St., N.Y.

Dear Sir:-

Your favor of Nov. 20th is at hand. I have no idea whether the Mount Olive mine will be worked or not during the period of its lease.

Yours very truly,

TREASURER :

Nov. 25th/93

Engineering "Mining Journal
Park Place,
N.Y.

Gentlemen –

I beg to confirm the adv. given you today to be inserted in your issue of Nov. 25. – as follows

"Wanted – One air compressor belt driven about 22" cylinder. State price, delivered at Connington, N.J. also when and by whom made. Address Thos. A. Edison,
Bway, N.J."

Yours truly
N.J. "Lem[illegible]

Nov. 23. 1875.

O. J. Conley Esq.,

My dear Conley :

Our lawyers here notify me this morning that the argument of the Rook case on appeal will take place in Brooklyn on the 2nd. Monday in December next, that is Dec. 11th., or as soon after as counsel will be heard. It will be necessary to have the model of the stock-house there during the argument. Will you therefore, kindly have the model put in proper order and perhaps it would be well if you send it to this office, and, then when we can find out what day it will be used, if you will send a proper man down to put it up in the Court-room, I think that will be all that we will have to do, but they say it is very important that the model should be there when they argue the case.

I am going out Saturday morning on the Susquehanna & Western road, and will get out at South Ogdensburg. The lawyer from the Accident Insurance Co. goes out with me, consequently you will kindly have a wagon that will hold two of us, at the train Now, in regards to this man, our policy is such that the Company

[illegible] which hall was in [illegible] and in [illegible] [illegible] long hope, [illegible] [illegible]. We are [illegible] [illegible] so far [illegible] with [illegible] [illegible] what the building was composed of, and [illegible] ask, he said he was simply to protect himself [illegible] brought [illegible] us.

[illegible] you on [illegible], I remain,

Yours very [illegible],

W. L. Perry

[illegible]:

[illegible] 23, 1[illegible]

[illegible] Mellow :

[illegible] find the Sand Statement for October. [illegible] months is before me so could not tell [illegible] what our expenditure of expenses at Edison this [illegible] what our Edison expenses were. You will find from the account that we did pretty well in October, thanks to your hustling. I only wish that we had orders now so that we could show up as well this month; but Walsh has not been able to get them yet, although he still says that he will.

I have just seen Mr.Wood and he has got a copy of Mr. Edison's letter, and as the policies expire in the different companies, he will not re-new them. He says that he has gotten now, he thinks, about $25,000 of the 50,000 extra which you want, and will probably have the balance in a day or two. I called his attention to not insuring in any one Company again over $15,000 with the exception of those which Mr.Edison names, where he can go up as high as 25,000 and he says the whole thing will be attended to, but I will keep informed on the subject and let you know from time to time what is doing.

(cancelled by me)

The market to-day has been comparatively steady but

W.S.H. (2)

[illegible] I heard closed at 34, and rest of the market strong

[illegible] I don't understand why it keeps going down, as cer-

[illegible] building tell me that the business [illegible] Company is in good financial shape.

[illegible] tell Mr. Edison that I took his letter with the [illegible] about Marine Insurance down to Mr. Williams and he says [illegible] will answer it to-day and either send the letter directly [illegible] or to this office. He says he felt very much compli-
mented in being called a "Marine sharp" as he took it that Mr. Edison
thought he must know something of his business.

I am going out to Edison on the Susquehanna & Western R.R
Saturday morning and the lawyer from the Accident Insurance is
going with me. I thought it better for him to go with me than to
go alone, as all he does for us is see whether it would be better
for him to settle or compromise with any of the people hurt from
the falling of that scaffolding, rather than stand a suit. The
Company holds us harmless on any suits brought against us, and he
says it is better sometimes to pay a small sum and settle, if we
win a suit, there are [illegible] expenses, and I thought that
[illegible] Mr. [illegible] not [illegible] any and would too
[illegible] the timber used, so I
[illegible] in rollers and [illegible]

(P) W.S.H.

I'd wire you last night about the window sash as my suggestion. We have a bid from Binghampton, as you know, of $137.00 for the sash. Gilson Collins was the next lowest bid, $207.00. I thought before ordering from Binghampton that I would get your ideas on the subject as we know Gilson Collins, we know their terms, and they promised to carry them forward,- whereas we do not know the other concern and it might be better to pay the $20.00 more and be sure of having things satisfactory. I wish you would let us know by telephone Sunday how which of the two to order from.

Yours very truly,

W. S. Perry

Nov. 24, 1893.

W.S.Mallory Esq.,

My dear Mallory :

Enclosed please find copy of a letter which I have just received from Williams & Terrill. If this letter does not answer the question that Mr.Edison asked, satisfactorily, if you will kindly let me know, I will try to get them answered either by Mr.Williams or some one else.

The stock market has been rather firm to-day, in fact very strong for most everything on the list, with the exception of General Electric and even that this afternoon started up and at 2:30 was selling at 35 which was a rise of 2 1/2% from the opening, it having opened at 3[illegible] closes at 37

Cutting was just in and has informed me that he will probably go up [illegible] to-morrow. That is a pleasure that I had not calculated upon, but I hope, for 12 hours I can stand it.

Mr.Noyes has just come in and says General Electric is up to 37, so possibly the report we heard this morning of the Ames Estate [illegible] sold out, can count for the decline, and if that was what caused the decline, the stock will probably rise

W.S. (2)

communicable before very long.

Yours very truly,

W. L. Perry

C O P Y

23rd. Nov.

W. H. Perry Esq.,

Dear Sir :

In reply to Mr. Edison's questions -
Pilotage charges are based on draft of vessel, alter with the time of year and off shore pilotage is not compulsory. Tables are given in the reference books. Summer rate about $4.50 per foot; Winter $5.00 per foot for steamers.

Quarantine charge is same for all vessels except those arriving from ports infected with contagious disease.

Towing - boats charge so much per hour, about $10.00, but tug-boatmen generally berth a steamer for a stipulated sum, for one boat $10.00 for the job.

Harbor masters fees - none in New York; In Jersey this fee depends on vessel's needs,- if Harbor master called on to clear wharf, i.e., to put small vessels out of way, vessel has to pay something - At Railway wharf think could be avoided altogether.

Consul fees practically same for allvessels.

Cardiff port charges - dock and light dues are based on register tonnage and are about 1/3 per ton. Discharging is based on amount of cargo landed.

Barrow-in-Furness, and Middlesboro-on-Tees charges about the same as at Cardiff. Stockton is also a port on Tees, but business is pretty much all done at Middlesboro which has better water and facilities.

The following books are used on out Maritime Exchange, and are, we think, the best for reference:

Dues and charges on shipping in Foreign Ports, by Urquhart and Published by Geo. Philip & Son, 32 Fleet St., London England.

Port Charges of the World by Theodore Hunter, Published by John Wiley & Sons - 15 Astor Place, N.Y.

The United States Publisher, "Port Regulations in Foreign Countries" which are Consular Reports.

Hunter's book is probably the best.

If you would like it we can have pro-forma accounts made up for vessels discharging at Barrow and Middlesboro.
We could not write this in time to send this to you to-day.

Very truly, Williams & Terhune (Signed)

NOV. 2?, 1893.

Mr. Jas. Mallory :

Enclosed please find a Postal-Card which we have just received from Finland in relation to magnetic separators. I enclose it to you as Mr. Edison may want to answer it.

If he should not, if you will kindly send me the card back and tell me what Mr. Edison wishes to say, I will answer it from this office.

Yours very truly,

W. Parry

TREASURER :

Nov. 23, 1895.

My dear Mallory:

Yours of yesterday with Certificate 1237 for 100 shares of Edison Ore Milling Co at hand, and I have taken it down to the transfer office and had it split up as you directed, twenty shares to J.F. Randolph, Edison's Laboratory, Orange, N.J. and 80 shares to W.S.Mallory. I will probably get the certificates tomorrow and if I do, I will send them on to you.

I beg now to send you the Labor Statement for October which Mr.Gedney has copied here in the office for his satisfaction and enable him to distribute his accounts the same as they do at Edison.

We were had, as I told you over the telephone, a weak market this morning, but since then quite a strong one; and the way Edison General is now going, I believe you are going to see quite a rise in it before any further decline. closes at 38

Yours very truly,

W.P.Perry

TREASURER :

NOV. 29, 1893.

Karl Peterson Esq.,

Pitkeranta, Finland.

Dear Sir:-

In answer to your Postal Card asking for a description of our magnetic separator, I beg to say we do not manufacture any for sale as we only make them for our own use.

Yours very truly,

W. T. Berry

TREASURER :

DEC. 4, 189[illegible]

[illegible],

Orange, N.J.

Dear Sir:-

Enclosed please find Certificates 1234, for 20 shares stock of Edison Ore Milling Co., made out in the name of J.F. Randolph, and Certificate 1235 for 30 shares made out in your name. I must apologize for not sending them before, but to tell you the truth I forgot them.

I also send you our four months note drawn to the order of Gilson Collins & Co., for $1236.65 being for the amount of their [illegible] up to Nov. 27th. bills. Since then we have had about $300.00 in bills which have not been checked at the Works. The reason for sending this out is Gilson Collins called me up and [illegible] to send them all we could as they needed [illegible] Mr. Edison to countersign same and [illegible]

The [illegible] Co., have just sent in a statement [illegible] let them have $1,000 to-day to provide for maturing obligation. I told them I could not as the last conversation I had with their Mr. Garvier I told him he must

W. [illegible]

Gentlemen: [illegible] you [illegible] how I could pay it. They enclosed a statement of their account in which they claim that we owe them $1325.90 less credit of $43.44, making $1325.46. On [illegible] there are two items apparently to come off of this, one for $42.[illegible] and the bills Nov.3rd, & 15th, amounting to $[illegible] which we claim we [illegible] furnished us to repair where they had guaranteed to keep the same in repair, leaving on our books an account due them apparently of $1125.61. Will you kindly let me know what terms you have made, if any, with them in relation to payment. The way I look at it, if we ~~were~~ ~~able~~ to pay them four months note with no interest, as the average date of their bills would be the first of September, we would have to pay them this balance about the first of January; but if you will kindly send me word so I can fix it up, I will be very much obliged.

General Electric is down a little again to-day, the news of not paying the dividend on the preferred stock being the apparent cause of the decline. The stock has been as low as [illegible] and closes at 40 1/8.

Yours very truly,

W. L. Perry

TREASURER.

Dec. 5, 1893.

W. S. Mallory Esq.,

Orange, N.J.

My dear Mr.Mallory:-

Confirming my telephone message to you of this afternoon, the Sessions Foundry Co., of Bristol, Conn., rating in Dun's is Aal which means HIGH. In Bradstreet's it is K a which means $300,000 to $400,000, first grade.

I beg to enclose you a cutting from the Wall Street Daily News of this morning which will show you what the "bears" in the General Electric Co., are trying to do. Mr.Herrick says the whole thing is a lie and he says if possible the Company is going to proceed against the paper. It has had the effect of knocking the price down to 33.

I also beg to enclose you a letter from Mr.Williams the freight broker with a pro forma statement of expense of a steamer from this city to Middlesboro and also to Barrow on Furnless.

Also a letter which Mr.Walsh has just handed me from the Johnson Engineering and Foundry Co., in relation to hydrants. Mr.Walsh also says that he has seen quite a number of second hand

W.S.H. (2)

hydrants but none of them worth anything so far as he could judge, but in the course of a couple of days he was in hopes he could answer your question more fully.

I mailed to the Reading Iron Co., yesterday the bills which we had against them and on receipt of their answer, if said bills are satisfactory, I should judge from your letter I could draw a note for their account and send same to you to be countersigned.

With regards Wetherill I am not doing anything in the matter as I will wait until they dun me for payment unless you otherwise direct.

Yours very truly,

TREASURER :

Dec. 6, 1893.

W. S. Mallory Esq.,

Orange, N. J.

Dear Sir:-

Mr. Dallett has just been in here and asked me as a great favor to settle up his account as he needed the money and as all the bills on his various shipments have been returned to us from the Works, checked and goods received, I gave him a check for twenty six dollars and some cents, and now beg to enclose you our 90 days note drawn to the order of Dallett Iron Co., for $101.55 which closes the account up to date. This is rather a small amount to draw a note for, but as those are the terms you made with them, I don't see any reason why we should not adhere to them and let him get the note discounted for cash. If you will have the note countersigned, Mr. Dallett says he will call on you in the morning for the note and will bring it in to me when I will sign it, as he says he wants to use same to-morrow.

The Daily News has to-day come out with an apology for their article of yesterday stating that they were not responsible for the same and did so at the time of printing, and that they

did not believe what they printed yesterday was correct, but unfortunately the apology of the Daily News has not the effect of putting the stock up as the printing of the first article had of putting it down. The stock to-day has run from 32 1/2 to 33 1/2 and closes about 33.

Yours very truly,

TREASURER :

DEC. 7, 1893.

J. R. RIGGS Esq.,

Milton, N.J.

My dear Mr. Riggs :

The time is now drawing near when the option which we have of yours on your holdings in the Davenport Mine will expire, and I write to you to-day to ask if you will kindly let me know how much money you and your partners would take to renew said option for six months.

We, as you know, are not in position yet to go to work, and probably will not be for the next few months. I should esteem it a great favor if you would renew the option and at any rate would like to hear from you what you decide to do.

Yours very truly,

TREASURER :

Dec. 7, 1893.

. Mallory Esq.,

Orange, N. .

Dear Mr. Mallory:-

Enclosed please find check for $2.55 amount bill of Mr. Banks' expenses.

I was going to ask you in this letter about what we had to pay the Mahoning Rolling Mills, but your telephone message answered that, and I will wait now until we hear from you the exact amount.

Mr. Dallett was just in with his note for $100.00 which I have signed and that closes his account up to the present date.

There has been very little doing in the market to-day, General Electric having been in the neighborhood of 34 most of the time. It don't act right and notwithstanding that the officers say, there is nothing the matter with it, I think the price of the stock shows that they either don't know or are lying.

Elliott was in just now and told me that Mr. Edison wished to get the option with Mr. Riggs renewed. I am afraid we will have trouble with him. He is a hog and I very much fear will

W.S.M.

as so much for renewing the option that it would pay better to pay him the cash, but I have written him asking him to come in and see his brothers and sisters and let us know as soon as possible what he would renew the option for for six months.

Yours very truly,

Treasurer ;

Dec. 11, 1893.

Theo. Lehman Esq.,

c/o Edison's Labratory,

Orange, N.J.

My dear Mr.Lehman :

Your favor of the 10th. is at hand and I was very glad to see from it that you had secured your release from the Military Service in Germany and that you are back here in this country again with us. I say us, as I think and hope ultimately that you will be with the New Jersey Co., entirely.

Trusting to see you in the office when ever you have time, I remain,

Yours very truly,

TREASURER :

Dec. 13, 1897

[illegible] Mallory Esq.,

My dear Mallory :

Enclosed please find a note drawn by Hines [illegible], for four months to the order of the Morgan Engineering Co., [illegible] 50 being for their share of $2,250 and 5% interest from [illegible] Mard. As I telephoned you this afternoon, one of their men [illegible] and I told him I could not say anything about what would be done until I heard from Orange. I thought it best not to bring [illegible] question of note up until I had it all signed and countersigned and ready to deliver to them. I hope they will make it, but will [illegible] you know on receipt of the note [illegible] say.

[illegible] was better to-day, [illegible] neighborhood of [illegible] people in Wall Street shaking as if going on, on the [illegible] that [illegible] very large and will probably put [illegible] number [illegible]

Our case over in [illegible]ham was not called to-day and probably will not be until to-morrow afternoon, but I will keep you informed when I hear from there what is going on.

Yours very truly, [signature]

Treas.

Dec. 14, 1893,

W. S. Mallory Esq.,

Orange, N. J.

My dear Mallory :-

In relation to your favor of Dec. 13th., I would say that General Electric Co., price for 16 C.P. lamps at present is as follows :- 65c. a lamp in any quantities, with 50% off. This was changed on the 1st. of December. They claimed when I went to see them this morning that they would keep us informed of any cut, and give us the lowest possible discount. I am not prepared to say that they will but as we very seldom order many lamps unless I go and see them personally I have an idea that I will get somewhere near the lowest prices. Their price in November was 85c. apiece list with 47 1/2% discount, making quite a cut.

I have no news to write you not have received the notes countersigned by Mr. Edison; I presume Mr. Randolph is not coming in today with the check. General Electric opened at about 37 1/8 and at 3:30 this afternoon it was 38 1/8. I did not see how it closed as Mr. Noyes is on a Jury this week.

F.S.H. (2)

Trusting to get the notes all right to-morrow morning, I remain,

Yours very truly,

W. H. Perry

TREASURER :

Dec. 20, 1893.

Thos. A. Edison,

Orange, N.J.

Dear Sir:-

I was very sorry to hear from Mr.Mallory yesterday that you were under the weather, and trust if it is the "grip" that you only have a slight attack and will be out in a day or two.

Enclosed please [illegible] which I have just received from Mr.Williams [illegible] written to ~~him~~ me last week

I presume Mr.Mall[illegible] of my interview with [illegible] & King in [illegible] having them extend their [illegible] the stock they [illegible] Newport Mine. We had quite a long interview, and [illegible] the option extended by paying $2[illegible] which [illegible] the purchase if we take the pr[illegible] on to [illegible] payment on the option. I [illegible] for [illegible] at [illegible] $50[illegible] $4,000, and [illegible] would be first of [illegible] 30.

Yours very truly,

[illegible]

[illegible] BROAD.

JAN. 3, 1895.

W. S. Mallory Esq.,

Orange, N.J.

My dear Mallory:-

Enclosed please find two months note dated Jan.2nd. made out to Alonzo Roberson in settlement of his account. As I said to you over the telephone, these goods were purchased on 30 days but in his letter to us he said he needed money and would gladly take a note of that kind. Will you kindly get Mr.Edison to countersign the same.

General Electric has been down as low as 30 3/8 to-day and closes in the neighborhood of 32 1/2.

Yours very truly,

TREASURER :

Jan. 4, 1893.

W. S. Mallory Esq.,

Orange, N.J.

My dear Mallory:-

I have just received a letter from the General Electric Co., enclosing a Patent taken out by Mr. Jory, and I beg to enclose you said Patent and a copy of letter written by Mr. Jory. I do not fancy there is anything to be done in the matter, but I think it well for Mr. Edison to see anything of such a nature that comes to this office.

Yours very truly,

W. S. Mallory

TREASURER :

C O P Y

SAN FRANCISCO, DEC. 28, 1893.

Thomson Houston Electric Co.,

Gentlemen:-

Enclosed please find a copy of patent lately issued to me on an invention especially adapted to the recovery of fine particles of gold now lost in the manipulation of gold ores. It is also adapted to the recovery of other metals in a cheaper manner than those now employed.

The invention is a practical and valuable one and being in the line of your operations, I would propose a combination with your Company and am willing to consider any proposition of that character made by you.

I would also be pleased to extend my patents in foreign countries where not yet provided for by giving your company a one-half interest in all such patents obtained at your expense.

Hoping to be favored with an early reply,

I have the honor to be,

Yours truly,

(Signed) Jos. H. Jory

312 Fair Oaks St.

Telephone, 239 BROAD.

JAN. 4, 1903.

Alex. Elliott Esq.,

Paterson, N.J.

Dear Sir:-

Your favors of Jan. 3rd. are at hand. The Annual Meeting of this Company will be held next Wednesday the 10th., and I will inform you as soon after the meeting as possible the names of the new Board of Directors and the Officers.

I note what you say with regards Adam Frick and we will send him his check as usual.

In relation to employing Al A. Baker from Michigan. It strikes me in the present condition of things and as we will not work the Davenport property for some six months or a year yet, that it will be just as well not to move in the matter for the present. Of course if any person comes to you and can satisfy you that he is entitled to an interest in the property and we can settle with him for anything like the price that John P. Brown said he settled for, of course we will do so, but I think at present we had better not stir the matter up.

Yours very truly, W. J. Perry
TREAS'R.

JAN. 5, 1894.

W.S.Mallory Esq.,

Orange, N.J.

My dear Mallory :-

Enclosed please find two forms of Proxies. Mr.Edison was in this morning and said if I would mail them to him he would have them made out. One is for the vote on the Stockholders Meeting of the N.J.& Penna. Concentrating Works next Wednesday. The meeting takes place at the Labratory. The other is for the Stockholders Meeting of the Ore Milling Company which takes place on the 16th of this month in this office. I should suggest that both proxies should be made out in your name. There are several reasons why it should be so;- First - with the Ore Milling Co., Mr. Edison has requested that you should be one of the Directors and it would be well for you to come in to the meeting which takes place at 12 o'clock on that day; and there are various other questions that will come up that I think it would be as well for you to be here as a stockholder to discuss.

With regard the proxy of the N.J.Co., it does not make

(2)

W.S.M.

so much difference as I fancy there will be nothing done there except to re-elect the old Directors.

Yours very truly,

TREASURER :

Jan. [illegible],1894

Alex. Elliott Jr.,

Paterson, N.J.,

Dear Sir:-

Enclosed please find report signed and sworn to by Mr. Page as Notary of New York, Department of Taxes & Assessments.

In relation to the last question, (Is the Company assessed by the State Comptroller), it is not assessed. The State Comptroller as you know, did send in an assessment for this year, but as I understand it this is made up for the past year and we were not assessed so I think you can answer on that question, No.

[illegible] Steel[illegible] as in this morning and said that he had written [illegible] last night that the two cases you spoke of had been postponed.

In relation to making a new bargain with Mr. Steele, I will have to think the matter over before answering it. It is [illegible] plan to swop horses crossing the stream.

Yours very truly,

TREASURER :

JAN. 18, 1894.

W. S. Mallory Esq.,

Orange, N. J.

My dear Mallory :-

Enclosed please find our note dated Dec. 20th. for four months, drawn to the order of the Russell Wheel & Foundry Co., When it is countersigned and returned I will then send the note and a check for the same amount to them in settlement of their account. I also enclose a form of resolution on Mr. Cutting's death that Mr. Herrick has drawn up. It strikes me that it is about what we want, and if you will show it to Mr. Edison and if it is satisfactory return to me, I will have it written in the minutes, and have a copy written out nicely and send it to his family, after the different Directors have signed it.

General Electric took quite a tumble to-day, selling down to 35. It is reported that Mr. Jas. R. Keene, who held quite a lot of it, was selling out,- what for I do not know.

Yours very truly,

W. S. Perry

TREASURER :

JAN. 26, 1894.

J. S. Harris Esq. Receiver,

Phila. Coal & Iron Co.,

Philadelphia, Pa.

Dear Sir:-

The reason we have not sent you note of this Company as agreed to by our Mr. Mallory has been that Mr. Edison has been ill and could not countersign same, but I have just heard from Orange this morning that he is out again, and I have sent him a note, drawn to your order, four months date, for $5,127.50 which he will countersign, and on its return here I will forward same to you.

I am very sorry for the delay but it could not be helped.

Yours very truly,

W C Berry

TREASURER :

Jan. 30,1894.

Thos. A. Edison Esq.,

Orange, N. J.

Dear Sir:-

Mr. Elliott writes me under date of the 29th., that he has the consent of the executors of the Marsh estate to reduce the yearly rental for one year 40%, namely from $250 to $150 on condition that we do not cancel or give notice of intended cancellation of this lease during the year. He also writes that in a conversation with you, you talked over surrendering this lease, and as Marsh makes the reduction on conditions that we do not surrender he makes the remark that we better not make the reduction but let the lease stand as it is and then the Works will be free to do as it pleases.

Will you kindly let me know what you wish to do in the matter: shall we make the reduction to $150 on the conditions named or shall we let it stand at $250 so that we can surrender the lease during the year if you want to?

Yours very truly,

W. J. Berry

TREASURER.

Jan. [illegible], [illegible].

Mr. K[illegible]ter & Co.,

[illegible] Wood St.,

Pittsburgh, Pa

Dear [illegible]

Enclosed please find lease which you sent on to me duly signed and executed before a Notary Public, with the signatures of two witnesses attached. Also our four months note for $1,564.25 and our six months note for $1,579.59.

[illegible] these will be satisfactory, I remain,

Yours very truly,

W. L. Perry

TREASURER :

P. S.

[illegible] reason the lease has been signed by Mr. Chas. Batchelor as Vice President instead of Mr. Edison as President is that Mr. Edison is away and I could not reach him for several days, and Mr. Batchelor is authorized by our Company as Vice President to sign when ever the President is not here.

W. L. Perry

JAN. 31, 1894.

Wm. C. Frick Esq.,

Danville, Pa.

Dear Sir:-

Your favor of the 30th is at hand. We do not feel at present in position to discount any of our paper. We are under great expense at present and have tried to fix it so that there are about regular amounts to be paid each month. I spoke to a note broker here who I know, but he said he did not care to take so small a note as that for a concern whose paper he had never handled, and as I know of no one else in that line of business, I am afraid I could not help you in the matter of getting our note discounted.

I will be at Ogden on Saturday therefore will not be able to see you on that day. I called Mr. Mallory up this morning at Ogden and told him that you had written asking what was the matter with the people that they were not buying any more rial and that you were at the same old stand and ready to do business. He said they had not been ordering anything lately, as most of our large material had been placed, and in fact had been delivered and paid for.

W. C. T. U.

I am very sorry not to be able to help you in this matter, but hope to see you before very long in the office.

Yours very truly,

A. D. Perry

TREASURER.

[illegible]AD.

Feb. 1, 1894.

Alex. Elliott Jr.,

Paterson, N. J.

Dear Sir:-

In answer to your question in favor of Jan.29th in relation to lease #27 of Marsh, Mr. Edison has written me this morning to have you write Marsh to make the reduction as he proposed from $250 to $150 for one year, and he accepts the condition that we do not cancel or give notice of intended cancellation of this lease during the year.

Yours very truly,

TREASURER:

Feb. 6, 1894.

Thos. A. Edison Esq.,

Orange, N. J.

Dear Sir:-

Enclosed please find seven certificates of stock of the New Jersey & Pennsylvania Concentrating Works, six of them made out in the name of Walter Cutting Executor of R.L.Cutting deceased, for 2405 shares of stock; and one certificate made out in the name of Walter Cutting for 10 shares of stock,- the last certificate made out in that way so that he can qualify as a Director.

I also enclose you the old certificates for the same amount of stock, namely, 2415 shares of stock, cancelled, with the power of attorney which R.L.Cutting signed back in September and filled out as we have drawn the certificates so that the transaction is all right and legal; and if you will kindly sign the certificates and send them back to me and also the old cancelled certificates, that we can paste in the certificate book, I will sign the new certificates and put the seal on and hand them to Walter Cutting.

You will notice that Certificate #2 for 100 shares of the old stock was made out in the name of R.L.Cutting Jr., but there is a

(2)

T.A.E.

letter pinned to the certificate written by Hutchinson, who was then Secretary of the Company, admitting that it was a clerical error putting the word Junior in, and, as you know that at that time the 8th. of August 1889, that the Cutting who paid for the 100 shares was no longer Junior, his father having died in '87, that the power of attorney would apply to that certificate as well as to the others.

Yours very truly,

TREASURER :

FEB. 16, 1894.

A. Elliott Jr

Paterson, N. J.

Dear Sir:-

Your favor of Feb.15th is at hand. I will send you the checks which you have asked for,somewheres about the 20th of this month. It is not convenient just at the present moment to send t them.

Mr. Steele informed me on Tuesday about the decision in the Book case,which I was very sorry to hear; and yesterday afternoon I had to go out,very unexpectedly to see Mr. Edison and I got Mr.Steele to go with me. We rather expected to meet you out there We had a talk with Mr.Edison on the subject and of course we are going to appeal the case. but Mr. Steele will discuss that question fully with you to-morrow when you meet him. He informed me this morning when he got down and I showed him your telegram, that he had already telegraphed to you that he would be here to-morrow afternoon. If you have anything to discuss with me,after seeing Mr.Steele, that you would rather talk over instead of writing, why I will be in the city at the office all day Monday, and will

A. E. Jr.

then be very glad to see you if you come in; but I fancy that you and Mr. Steele can decide everything without your seeing me.

Kindly inform me what your decision is by letter, if you are not coming in on Monday.

Yours very truly,

TREASURER :

Mar. 6, 1894.

Thos. A. Edison Esq.,

Orange, N. J.,

Dear Sir :-

Your telephone message of this morning in relation to the Silver Lake Property is at hand. I find that we have paid $1771.00 to Watson, the Tressurer of the East Jersey Proprietors, for all their right and title in the Silver Lake Property, but we have no papers here to show that the deed has ever been issued to us, therefore I presume thay were issued in your name and have not been transferred; but we had a letter from Eaton & Lewis in which they say that they will get the deed from Mr. Watson and I have referred the matter to them asking them to look up their old papers and see what has become of the deed, and in whose name it was taken out and when I get an answer from them I will let you know but as the deed has never been in this office, I think it must be in your name.

Yours very truly,

TREASURER

April 4th 1894.

Thos. A. Edison Esq.,

Orange, N. J.

Dear Sir :-

Your favor of April 2nd, in relation to Lima Oil is at hand. We have seen the Standard Oil people about it and have ordered two barrels to be shipped immediately by freight and five gallons to be sent by Express. They inform us that the nearest point at which we could get it was Olean, N.Y., and they telegraphed there immediately to have it sent off to you. The price of the stuff is $9.00 a barrel, F.O.B. Olean,- a barrel containing about 50 gallons. They inform us that Olean is the nearest point we could get it from.

Enclosed please find Certificates of stock for the call due to-day which you will kindly sign, and return.
Also, please find enclosed bill for March, of Mr. Elliott's which I would like O.K'd.

We are just in receipt of your favor of this date enclosing check for $4,800.00. Thanking you very much for the same, I remain,

Yours very truly,

Treasurer :

May 8, 1894.

Alex. Elliott Jr.,

Paterson, N. J.,

Dear Sir :-

Your favor of May 7th with certificate for 10 shares of the Sussex County Iron Co. stock in the name of Chas.Batchelor is at hand; also an account of the meeting held at your office on May 7th. I thank you very much for the same.

On Saturdat while at Edison,N.J., Mr.Edison told me that he had had a conversation with you in relation to the Sussex County Iron Company and that you had told him that the stock we owned in the Company did not represent more than 1/2 the ownership of the property and asked me if I had heard anything about it. I told him I had heard from you on the subject and that there were certain people in the West who claimed to have some small interest in the property, but that my understanding of the same was that the whole combined interest amounted to a very small percentage of the whole. I was very much surprised to hear that you thbught it amounted to half and that I had not heard of it. I talked the matter over with Mr.Edison, and he decided that you had better have your

A. E. (2)

searcher go over the details and see just what interest we do not own but that he did not want to spend much on the thing but felt that your searcher could do that in a few days. Will you kindly let me hear from you on the subject as I cannot help thinking, not having heard from you, that Mr.Edison must have mis-understood you and that the interest held by us represents more than half of the property.

Yours very truly,

TREASURER :

May 10, 1894.

W.S.Mallory Esq.,

Edison, N. J.,

Dear Sir :-

Your valued favors of the 9th are at hand. Enclosed please find check drawn to your order for $200. We have charged that to April and have put you on the pay roll and will send you a check for that amount beginning of every month.

I note what you say with regards Mr.Phelps and have made up his account and sent him a check for $20.77 which was made up as follows : 4 days pay, expense account, less $107.50 which he had received from Mr.Smith. I said nothing to him in my letter about the months pay or anything. He had not asked for it consequently will say nothing unless he comes in and claims it. I note what you say as regards money and I have delayed writing you on the subject as I didn't exactly know how much we would want after the $2,000 on the 19th. The amounts you mention that you have told Randolph to send are correct. I have already received the $5,100 The $3,000 on the 12th,- the $13,000 on the 17th and the $2,000 on the 19th will carry us along to that date. I wrote you in my last

W.S.M. (2)

letter that in order to close up Mr.Moore's bills as far as we have them, that I would need next week $900 more to send them. With regards any more money I can't tell you exactly how much I will need. There is a little over $800 more due on notes the last of the month. There will be a freight bill for April which has not come in as yet, but as we got quite a number of cars of coal it will probably be large and I should say will be over $1,000. There is about $900 due on the March accounts yet; small ones that are too small to give a note., but I can't say it will take all of that as in cases where the April accounts due, amount to enough to give a note, I will try a note business, but I should say roughly I will need somewhere along about the 25th about $5,000; but between now and the 20th I hope to be able to get that down considerably, therefore should not prefer to figure for the next few days on it.

I will not be up on Saturday as I told you, as I am very busy moving. I had no idea that there was so much work to do about a house until I got down to Staten Island but I think by Saturday night I will be all settled.

I had such a pleasant time yesterday; I spent an hour at the tax office swearing down our city taxes on Ore Milling and New York Concentrating Works and it is astonishing how much you can reduce the amounts if you will only swear hard enough. I

(3) W.S.M.

reduced the Assessment on Ore Milling from $24,000 to $3,000 and on New York Concentrating Works from $11,000 to $5,000, the tax on those amounts being about $20 to each Company.

Yours very truly,

TREASURER :

May 14, 1894.

Geo. E. Raymond Esq.,

749 Broad St.,

Newark, N.J.

Dear Sir:-

As I might that this Company holds a Policy in the Prudential Insurance Co., on Mr. Edison's life for $10,000 premium due July 18th $469.60; and a plain life Policy in the Mutual Life Insurance Co., dated June 16th, premium due $407.00; and a five year policy in the Union Central for $20,000, premium due June 15th $437.40 and in the Provident Life and Trust Co., of Philadelphia; a five year policy for $25,000, premium due June 28th, $485.00 In these two last policies, is there any way by which they can be changed to plain life policies, and if so at how much increase of premium. I would like to hear from you on the subject as I fancy we will continue the policies in force.

Yours very truly,

TREASURER ;

May 21,1894.

John F. Randolph Esq.,

Orange, N. J.,

Dear Sir :-

I am in receipt of a notice from the Provident Life and Trust Co., which I presume you received at Orange. I expect notices from the Union Central, for $20,000 insurance on Mr. Edison's life, premium $437.40; also one from the Mutual Life Insurance Co., for $10,000 due on June 16th for $407.00; also one from the Prudential, due July 18th, $10,000, premium $469.00. Will you kindly, when you receive those notices, send them to me as Mr. Edison has decided to renew them for another year, and I will pay the premiums from this office.

Yours very truly.

TREASURER :

June 7, 1894.

W.S.Hall & Bro.,

Camden, N.J.,

Dear Sirs:-

Enclosed please find a letter which we received this morning from the Crucible at Midvale Co.. I presume it is in answer to some letter you wrote from the Works and they sent it to us by mistake.

Also find enclosed a letter from a carpenter at Allentown, Pa. who we wrote to last week in regard to getting a job for him. Baldwin was over at Kensork this morning and saw 14 carpenters go off. I presume you don't need any more but if you should it might pay you to write to Allentown to this ~~effect~~ address. I know nothing about him except that he answered our adv. last Winter, trying to get a job.

Batchelor was in this morning and says he is going to be up to the Works to-morrow. I am very glad he is going up in this way as I hope before very long to see him in harness again. I will be up Saturday and I am going to bring up quite a large number of notes, and we will go over what money we want for the middle and end of the month.

Yours very truly,

W. L. Reed
Treasurer.

June 18, 1894.

Alex. Elliott Esq.,

87 Liberty St., N.Y.,

Dear Sir :-

Your favor of June 13th directed to Mr. Edison, in relation to crushers, has been forwarded to me from the Works and in answer to same I take pleasure in informing you that we have three Brennan Crushers in good condition size 10 X 25, and one of the same make 12 X 37. Our lowest price for cash on the 10 X 25 is $500 apiece with the extra parts at 1 1/4c. per pound.

The one we have sold, the extra parts came to some $53.

The large crusher we will sell for $800.

Trusting to hear from you in relation to same, I remain,

Yours very truly,

W. Berry

TREASURER :

June 27,1894.

W.S.Mullory Esq.,

Edison, N.J.,

Dear Sir :-

Your favor of yesterday is at hand and Ed has written answers to your different questions and sent to you direct.

Enclosed please find two notes - one for Geo.V.Cresson Co., and one for the Maine Belting Company. If you are going down the last of the week to get the Birmingham note countersigned, get these countersigned also. In the meantime I have written to the Birmingham Company the reason of the delay. If they make a fuss and insist on having a note at once, I will notify you to send it in and I will telegraph to Mr.Batchelor to come down and sign it as Vice President ; but I don't feel like doing that until Mr. Edison or you decide that we shall do it..

I have just received the following communication from the N.J.Central Railroad, it having been sent to me at the suggestion of Sandford Clark & Co.,:- Car 36109 was loaded and sent off from our Works on the 22nd to Sandford Clarke & Co., and the N.J.C.R.R. sends me word that the car was loaded before we loaded it with screenings, or in other words crushed stone. Sandford

W.S.M. (2)

Clarke have sent me around a bundle of stone that was taken out o... the car and state that owing to it not having been cleaned out be... fore we loaded it that the sand is absolutely unsaleable for them and they claim we should not charge them for it. It does seem to me where we are loading so few cars that those we do load, ther... ought to be somebody there so see that they are in proper shape before the sand is put in. Will you look into the matter and sti... up the foreman who has that business, as our sand business at present is so poor it seems a pity when we do get an order we have got to have these sort of complaints.

Yours very truly,

W. T. Berry

TREASURER :

June 27, 1894.

O. J. Conley Esq.,

Edison, N. J.

Dear Sir :-

Your favor of yesterday's date with receipt enclosed is at hand. I receive telephone communications from Orange every day with regards the condition of Mr.Edison and I fancy there is nothing very serious the matter with him at present but I doubt if he gets back to the Works for some little time yet.

I will be up on Saturday and if you will have Dan meet me at Ogdensburgh, I will be very much obliged.

Yours very truly,

W. L. Perry

TREASURER :

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152

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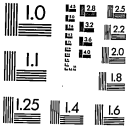

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14:1

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